THE UNIVERSITY OF WASHINGTON

Arboretum *bulletin*

SUMMER
1961

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Arboretum bulletin

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COVER PHOTO
A Seedling form of the hybrid 'Elma'
(*Cistus Palhinhaii x C. laurifolius,* flowering in late June)

The Arboretum Bulletin

Vol. XXIV No. 2 Seattle, Wash. Summer, 1961

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A Letter from the President

TO MEMBERS OF THE
ARBORETUM FOUNDATION

Greetings:

MAY-JUNE bring us to the time of year when the Rhododendron, our State Flower, and Azaleas are at their prime. The hundreds of plants, gathered from many sources, make a beautiful picture for the stroller who walks the paths or rides along the upper road of the Arboretum. The photographer, gathering data for his book of blossoms, is also very much in evidence when the sun shines on the object of his search.

This is truly the time when a visit to your Arboretum is a fascinating adventure. If you haven't taken a walk there recently, now is the time to enjoy this beautiful park.

Of importance to each of you is the growth of membership in the Foundation. The splendid work of the Committee with the Units and the general public is producing not only new members but increased interest in our program. A list of recent additions to our membership was given in the Spring number of the *Bulletin* and a further list is given in this issue.

The Japanese Tea Garden continues to attract many people. On a recent day over a thousand visitors passed through the gates into this little bit of Japan. We are all looking forward to the future when the cherry trees will add their blossoms to make the garden resemble, to an even greater degree, the land of the Rising Sun.

Some of the recent activities of the Arboretum Committees will be covered on a separate page in this number. It is our intention to keep the membership fully informed about the interesting events which constitute the Arboretum program.

Yours very truly,

William D. Shannon
President

Some Arboreta & Gardens of N.W. Europe in 1960; Part 2

B. O. Mulligan

LEAVING Perth by train on Monday morning, August 1st, I travelled, via Glasgow, down to the extreme southwest corner of Scotland, through the county of Ayr, famous for its cows—not to omit Troon & Turnberry for the golfers—then a climb over the high moorlands of Wigtownshire and a long descent to Loch Ryan and Stranraer, on a peninsula jutting into the North Channel connecting the Irish Sea and the Atlantic Ocean.

Because of this maritime atmosphere, plus the influence of the Gulf Stream from the Atlantic, this corner of Scotland possesses a climate approaching that of San Francisco, although some 17° farther north in latitude.

For two days here I was guest of Lord and Lady Stair at Loch Inch, which, while primarily a very large agricultural estate, possesses in the garden and grounds around the house an old and extensive collection of trees of many kinds, rhododendrons in great size and variety, as well as numerous other shrubs which enjoy this salubrious climate.

An avenue of the Chilean monkey-puzzle tree *(Araucaria araucana),* gigantic old specimens of the Grecian fir *(Abies cephalonica)* and of our native noble fir *(Abies procera),* which flourishes in the western parts of Great Britain, are most notable, with magnificent examples of Eucryphias, Embothriums, Eucalyptus, the same *Acer Forrestii* which I had seen in Mr. Cox's garden at Perth, and perhaps most remarkable, ancient trees 30-40 ft. tall of *Rhododendron arboreum,* grown from seeds brought back by Sir J. D. Hooker from the Himalaya in 1849-50; one measured 42 inches in circumference 4 ft. above the ground! Visiting at this season gave me no opportunity to appreciate the extent and quality of the rhododendron collection, though I saw many species and first-class hybrids, the former often raised from the original collector's seeds from China, Burma or elsewhere. One hybrid still flowering was 'Arthur Osborn' *(Griersonianum x didymum),* showing brilliant red bells in the woodland.

Another shrub of great value in the August landscape was a glowing red Australian bottlebrush (*Callistemon* sp.), seen across a lawn from the house windows at a distance of perhaps 250 ft. The western Chinese *Mahonia lomariifolia* was flourishing, 9-10 ft. tall, sheltered between a garden wall and surrounding trees; likewise the fine white hybrid *Escallonia Iveyi,* which we grow in Seattle with much less success.

While here I was also taken to see Mr. Olaf Hambro's garden at Logan, near the south end of the same peninsula but evidently more exposed to the westerly winds. This was built up by two brothers McDouall during the earlier part of this century. Perhaps the groups of tree ferns *(Dicksonia antarctica)* are the most unusual feature, but the big Eucalyptus trees, especially *E. urnigera,* the Chinese firs (*Abies* species) and the large-leaved rhododendrons of the *Grande* and *Falconeri* series, here so much at home that they produce self-sown seedlings (*R. sino-grande* and probably other species), are all of exceptional interest. So also was a very large old specimen of the evergreen Chilean shrub, *Philesia magellanica,* generously displaying its long, rose-red waxen trumpets despite the cloudy and showery weather so adverse for photography. These two gardens should certainly be seen in the spring to appreciate the wealth of their plant material; my debt to Lord and Lady Stair and their hospitality remains in my memory.

From the nearby port of Stranraer it is less than two hours by steamer to Larne, in N.E. Ireland, from whence a train takes one in an hour or so into Belfast, capital of the six counties of Ulster. This was to be the center for visiting several places so I stayed four days in the city.

On one I travelled by bus to Newcastle, on the coast at the southern end of Co. Down,

spending the balance of the morning at the Slieve Donard Nursery in the good company of the very knowledgeable owner, Mr. Leslie Slinger, and going with him after lunch to the long-established garden at Castlewellan Castle, a few miles inland, belonging to Mr. Gerald Annesley.

This part of N. Ireland again possesses a very equable climate, being protected by the Mourne Mountains to the west, so that evergreen trees and shrubs thrive, especially those from Chile and New Zealand, for example Escallonias, Eucryphias, *Griselinia,* Leptospermums, Senecios, Hoherias, *Pittosporum tenuifolium,* grown as a hedge, *Crinodendron Hookerianum (Tricuspidaria lanceolata)* and many more of high garden value.

A collection of forms of *Potentilla fruticosa* was in flower at the time of my visit (August 5th) and showed several outstanding clones amongst them, notably the dwarf 'Longacre,' 'Primrose Beauty,' 'Jackman's Variety,' which can reach 4 ft. in height, and the closely related species *Potentilla arbuscula,* 18-24 in. tall, with very large flowers.

Another, but herbaceous, genus for which this nursery is famed is *Dierama,* the South African wand flower, a plant which has done well with us in Seattle for the past ten years. Mr. Slinger has introduced a dwarf rose-colored species, and then produced hybrids between it and some of his fine selected forms of the old *D. pulcherrimum,* so that a series from one to the other (in size) is now available, in a variety of colors. We hope that, since some of both the Potentillas and the Dieramas reached us this spring, by Mr. Slinger's courtesy, it will not be too long before they can be seen here in flower.

Castlewellan Castle is a very different experience; another country estate of some age and size, having an old walled garden now full of many mature but also some younger trees, mostly conifers, in great variety and full of vigor; in fact I saw none elsewhere on my travels to surpass them in healthy appearance.

As a prime example one could cite a majestic 80-ft. specimen of the Himalayan *Picea Smithiana;* others, not so large but both rare and attractive in their differing styles of growth, including two Chinese firs, *Abies Faxoniana* and *A. Forrestii,* and the older Japanese *A. Veitchii; Chamaecyparis formosensis,* having some resemblance to our own western red cedar; the Himalayan hemlock, *Tsuga dumosa,* and two junipers from the same region, *J. recurva* with pendulous branchlets and the stiffly upright *J. Wallichiana.*

Not far inside the garden gate was a splendid specimen of *Rhododendron sino-grande,* 20 ft. high after thirty years growth. Elsewhere the scarlet Chilean *Tropaeolum speciosum* scrambled over hedges of *Drimys lanceolata (aromatica)* from Australia and Tasmania, and indiscriminately over other trees and shrubs as it pleased. In all, this is a garden of particular interest to the lover of fine conifers, although not wanting in many other families also, unmentioned here for lack of space.*

Probably the best-known garden in North Ireland is Rowallane, at Saintfield, some twelve miles south of Belfast in a rolling, grassy countryside. Here, during a period of about forty years, the late Mr. Hugh Armytage Moore assembled in an area of approximately 30 acres a most extensive collection of the best trees and shrubs.

Great care and skill was used in placing and arranging this material, to provide long vistas as well as prominent individual specimens or groups of similar kinds of shrubs. Rhododendrons were especially favored, from the smallest to the largest, and have generally thrived, although the rainfall is not heavy enough for the large-leaved species to flourish as they do in western Scotland.

The visitor will find them used as groups or specimen plants on either side of the long, winding driveway, in thin woodlands of oak, the Portland Chapter. Along a streamside path, the commercial displays covered a bank that sloped up to some permanent plantings

(Continued on Page 59)

*Described in detail in the "Jour. Roy. Hort. Soc., May 1961

Ceanothus: A Gardener's Dilemma

Arthur R. Kruckeberg*

GIVE me a tract of native landscape somewhere down on the Monterey Peninsula in California and I will solve my dilemma in no time. With canyon slope, hot ridge top and open cliff facing the sea, I could raise just about all the many kinds of Ceanothus that I might desire. But no, my adopted home in the Northwest with its 35 inches of drip, drip, drip and those untimely early and unseasonably late cold snaps force me to meet the dilemma of what wild lilacs I can grow in other ways. What follows will be the state of compromise that Northwest gardeners have made with this tempting group. But first, I will present the credentials that entitle me to write about Ceanothus.

This account will be no shotgun marriage of reluctant author with a less-than-tempting subject. The wild lilacs and I have been inseparable since my boyhood in southern California. Particularly fortunate was this boyhood association, not only because of the vast displays of ceanothus-clad hillsides around my home near Pasadena. Another essential ingredient—a pair of near-fanatic protagonists of native plant horticulture serving as my constant preceptors—made the "buckthorns," the "buckbrushes," the "deerbrushes" vivid and fascinating to me. My father, Arthur Woodbury Kruckeberg, was not just a printer to Theodore Payne, the native plantsman of Rancho Los Feliz. The two were of a single purpose, zealous and ever-infectious in their campaign to put California natives back into the landscape. Visits to the Payne nursery and the Rancho Santa Ana Botanic Garden, many tramps through the elfin-forest of chaparral where ceanothi abound, and, not the least, continuous association with wild lilacs in our home garden gives me a deep sentimental attachment to the clan. So the reader of this eulogy may need an antidote to counteract the visions I have of these treasures as seen through my lilac-colored glasses.

First off, let us leave fancy and prejudice for a moment and look at some unadorned botanical facts. The genus *Ceanothus* belongs to the family *Rhamnaceae,* called by North American botanists the Buckthorn family. Brethren genera of *Ceanothus* are such unlikely relatives as Cascara (*Rhamnus* spp.) the Jerusalem Thorn *(Paliurus)* and the weird South American *Colletia* species. But none of these genera can compare in quality and diversity with the exclusively western hemisphere genus, *Ceanothus.*

To give a definite figure for the number of *Ceanothus* species known to botany is to ignore the many cases of blurred species boundaries, especially in California. In a comparison of the frequency of "good" species in certain genera (i.e. those that show prominent discontinuity of variation patterns among themselves), Dr. Verne Grant of the Rancho Santa Ana Botanic Garden puts *Ceanothus* at the bottom of the list: of his Californian representation of 43 species, *none* he considers "good." Hardly recognizing this limitation of classification, Professor H. E. McMinn, in his systematic treatment of the genus,† admits 55 species and 25 varieties through generic portals. Of the total of 55 species, 44 are found in California; a small number of these 44 also occur in neighboring states. You can be sure that such a high number of species is bound to create problems of species demarkation for the botanist!

The genus divides itself readily into two sections, *Euceanothus* and *Cerastes.* Species in the former section have alternate leaves, often with three prominent veins; some few species are semi-evergreen or deciduous (*Ceanothus integerrimus, C. parvifolius, C. americanus,* and *C. sanguineus,* for example). Species of *Euceanothus* range in habit from low, almost repent ground-cover types to ar-

*We are grateful to Dr. Kruckeberg (of the College of Botany) and his "lilac-colored glasses" for this excellent discussion of the Ceanothi grown here.

†van Rensselaer, M., and H. E. McMinn. 1942. *Ceanothus.* (Santa Barbara Botanic Garden.)

borescent forms 15-20 feet tall. No generality does their diversity justice. However, I am inclined to think of them as less often the stiff, spinescent, small-leaved species that are so ubiquitous in the section *Cerastes*. The latter section readily stands apart from *Euceanothus* in having small leathery leaves, generally disposed oppositely in pairs on stiff, divaricate stems. The leaves are subtended by corky stipules. Undoubtedly, the most drought-tolerant species are in the *Cerastes* group—a predilection that readily eliminates a number of them from cultivation in our area.

However variable the ceanothi may be in features of habit, foliage, and other vegetative characters, they all produce a fairly standard floral display. The tiny flowers are borne in dense inflorescences which, seen *en masse,* give the real showiness to the shrubs in flower. Each tiny flower is part of an umbel-like cluster; many such clusters are aggregated into elongate panicle-type flower clusters, usually at the end of lateral or terminal branches. Color of flowers ranges from white through lilac and lavender to blue and even purple. Blue may be rare in the plant world, but it is common coinage in this segment of the floral universe!

It is the mass show of hundreds of the many-flowered aggregate inflorescences that make wild lilacs in bloom a sight never to be forgotten. And spare the flower clusters, for if the bees have been busy, the glistening red of the warty fruits is barely anticlimactic to the long and dazzling period of bloom.

If all this preamble has whetted the reader's appetite for a garden satiated with ceanothi, then the hard reality of our original dilemma must be faced. We of the Pacific Northwest have to be content with only a sampler of the horticulturally acclaimed species and varieties that are available. Two deterrents to wild-lilac success—hardiness and

Below:

Three low-growing Ceanothi from the Arboretum's collection—*Ceanothus griseus* var. *horizontalis,* left; *C. thyrsiflorus* 'Repens,' center; and *C. gloriosus,* right.

Fig. 3 Photo by: William Eng

dryness—loom large in their culture for our region. Even when we reject the pessimism of the "1955 freeze" as a measure of hardiness, we find that the list is thinned out. In general, if a California species grows natively from Monterey County northward along the Coast, it stands a fair chance of survival here. Then there is the problem of overwatering—much of which we have little control over in the Northwest. Yet, we *can* control summer watering; for the established Ceanothus plant, this means NO WATER, from mid-July on.

Even with the two restrictions of hardiness and dryness, we are left with a generous array of foliage and flower-color types to choose from, and in habit, plants all the way from creeping rock-garden inhabitants to tall, often arborescent shrubs. The accompanying tabulation of species and varieties gives an optimist's view of what can be tried in our climate.

The rather impressive list which I have prepared from our Arboretum accession records, the *Ceanothus* 'bible' (referred to above), and from local nurserymen and others who have tried wild lilacs, is clearly a challenge to the adventurous gardener. Some species are doubtful in hardiness while others may demand more dryness than ordinary garden conditions can give them. And yet from this list, we can pick and choose. A selection of the ten best species or cultivars now follows: such an arbitrary choice would still give the connoisseur a good sample of Ceanothus bedazzlement.

Of the low-growing forms, I would pick *Ceanothus gloriosus* as a front-runner. Just look at the plot of it outside the Arboretum restrooms and conjure up all the groundcover uses it can have in your garden, parking strip, sunny bank, or rockery. Its holly-like leathery leaves are fully evergreen; the plant is faithfully free-flowering in mid-April. Two other creepers have been successful in the Northwest. Repent varieties of *Ceanothus thyrsiflorus* (var. *repens*) and *C. griseus* (var. *horizontalis*) are well-known to Arboretum visitors. They contrast significantly with *C. gloriosus* in foliage and flowers—as would be predicted by their inclusion in the *Euceanothus* section of the genus. Both are repent forms of species that are medium to tall shrubs in their typical form. In contrast to *gloriosus,* varieties *horizontalis* and *repens* are less prostrate and have larger and bright green leaves. In flower, they are certainly showier than *gloriosus*—longer panicles with many more flowers. Both repent forms of *thyrsiflorus* and *griseus* have been used in breeding, giving a number of low, semi-prostrate cultivars that merit further trial in our area.

Two other prostrate species could be called pygmy variations on the *Ceanothus gloriosus* theme. The widespread "Mahala Mat" or "Squaw Carpet" of Oregon and Northern California *(C. prostratus)* is a natural for a sunny slope in the rock garden. In the wild, the absolutely prostrate mats often have a spread of 6-8 feet. Where *Ceanothus prostratus* barely gets into Washington (near Satus Pass), it is not so rampant. I have not found many gardeners who have succeeded in keeping this gem alive for very long. The other species, *C. pumilus,* also has real rock garden potential. It is one of those Siskiyou Mountain plants which ranks high among the many natives of a region abounding with notoriously choice shrubs. Do not covet this little prize too highly, for, should you get it, it is likely not to persist. But it is a challenge! *Ceanothus prostratus* and *C. pumilus* will have to stay off my "10 best" list—but for reasons of difficult culture only.

The remaining seven are medium to tall shrubs, all in the *Euceanothus* section. Right at the top is *Ceanothus impressus,* the "Santa Barbara Ceanothus," and a form selected here at the Arboretum, 'Puget Blue.' In full bloom by the end of April, *C. impressus* becomes a well-deserved center of attraction in the Arboretum. The stiff, intricately and densely branched shrub of 8-10 feet is a blue haze of flower at this time of year. And I know no better combination of habit, leaf, and flower. The small, dark green leaves have a furrowed leather texture and literally cover the

rigid branchlets. Its popular presence in the Arboretum has had favorable effect in the nursery trade where in very recent seasons it has been offered. *Ceanothus papillosus* ("Wartleaf Ceanothus") and its variety *Roweanus* should be included here, for both are larger-leaved variations on the *C. impressus* theme. I have had tremendous success in growing *papillosus* over the past few years; naturally it is a favorite of mine!

Both *Ceanothus griseus* and *C. thyrsiflorus* in their erect bush forms demand high position in the exclusive ranks of flowering evergreens. *C. griseus* is the shorter of the two in stature but makes up in ample spread and larger leaves. The description by van Rensselaer should be enough to whet appetites! The "Carmel Ceanothus" has "deep green, glossy, ovate leaves about 1 to 2 inches long, and deep blue flowers produced in March and April in abundant clusters about 1 to 3 inches long on stalks of about the same length. The clusters of jet black seedpods following the flowers are an attractive feature of this plant." In time, *griseus* should become one of the most popular species in Northwest gardens.

Though taller and less bold in foliage pattern than *griseus, Ceanothus thyrsiflorus* should not be underestimated. It is fully hardy here in all but the severest winters. Even in 1955, badly "burned" specimens sprouted from root crowns. Recovery is fast; in fact, most ceanothi grow rapidly in cultivation whether reviving from some natural or man-inflicted onslaughts, or in just growing to maturity. This flush of growth may be a cause of their frequent shortlived stay in gardens.

The "ironclad" of all the clan is *Ceanothus velutinus* variety *laevigatus*. Durability and hardiness is just what you would expect of a Pacific Northwest native. The "Varnishleaf Ceanothus" is a coastal variety of that ubiquitous shrub of the Cascades and Sierras, variously known as "Tobacco Brush," "Sticky Laurel," "Mountain Balm," or simply "Buckbrush." Variety *laevigatus* is decidedly more ornamental than its shrubbier counterpart from east of the Cascade crest. It may attain the stature of a small tree (20 feet), though is most often seen as a large shrub to 8-10 feet. In early May its open branches are laden with a foam of creamy white flowers, massed over a background of large shiny leaves. The plantings at the head of Woodland Glen in the Arboretum attest to this species' tolerance of shade and water. In a few places near Seattle, "Varnishleaf Ceanothus" can be seen in the wild state, still holding its own against the encroachment of civilization. Along the east shore of Lake Sammamish, it is an aggressive colonizer of roadbanks and the railroad right-of-way. But for the best samples of var. *laevigatus* in nature, go to Hood Canal, where it grows in profusion along banks skirting the shore. In western Washington, a similar but deciduous Ceanothus, *C. sanguineus* ("Oregon Tea Tree") is often found with the "Varnishleaf Ceanothus." In mid-summer, both plants merge in general similarity of habit and aspect. *Ceanothus sanguineus,* with thinner leaves, is rarely as showy in flower as *C. velutinus laevigatus;* its flowers are a dull white or pale pink.

It is a pity that another species—just barely native to Washington—has not been tried more often. *Ceanothus integerrimus,* "Deer Brush," is a real contrast to the bold and somewhat stiff habit of most tall species. This semi-deciduous plant of open, spreading habit has slender, gracefully arching branches with a distinct yellow-green cast to them. The range of color variation (white through lilac to deep blue) is both an asset and a liability. Natural populations in California and Oregon are not constant in flower color so that seedlings may be quite unpredictable in eventual flower color. Well-grown shrubs, selected for color, can be a real asset in the open park-like stretches of a woodland garden. The light-textured flower panicles may be as long as four inches and borne in generous numbers.

One wild lilac is within everyone's reach. Better known to gardeners and horticulturalists than any other Ceanothus is 'Gloire de

Versailles.' This popular hybrid originated in Europe as a cross between two North American species, *C. americanus* (from eastern United States) and *C. coeruleus* (from Mexico). An old story is this: North American natives going to Europe and winning acclaim before achieving acceptance on their own continent! 'Gloire de Versailles' is a tall, semi-deciduous shrub with thick, dark green leaves 2 to 3 inches long. The long panicles of fragrant blue-lilac flowers begin their show in June, a display that tapers off only in late fall. Northwest gardeners have used this pliant, undemanding shrub either as in specimen plantings or trained on a wall —the latter posture with unusual effectiveness.

Some notes on culture of ceanothi are in order, for this is a good do-it-yourself group from seed to mature shrub. For propagation by seed, the hard, dry capsules should be collected just before they open; capsule and seed can be separated by carefully crushing the hull and winnowing the seed from chaff. The rather large, dark and shiny seeds retain their viability for several months. When ready to plant (usually in fall or winter) the seeds should be pretreated in the following manner. They are soaked a few hours or overnight in tapwater which is brought to a boil just before immersion of the seeds. The soaked seeds are then planted in a sand-loam-peat mixture; germination may take up to 3 months. Not all species root readily from cuttings; *thyrsiflorus, griseus,* and *papillosus* are examples of the type that root well as heel cuttings when dipped in a hormone powder.

The first year of growth in their permanent site is the most critical; a consistent watering regime should continue until the late fall rains take over. In subsequent years, natural irrigation should suffice; this is true even in the drier sites where the wild lilacs thrive anyway. Occasional dressing of manure helps flowering in the more vigorous, lush-growing species; yet they usually do well without any fertilization whatsoever. Most species do not take to severe pruning at all well. The Santa Barbara Botanic Garden staff practices a restricted pruning they describe as pinching off the young tender growth to control the form of the shrub. Severe annual pruning seems to be tolerated only by 'Gloire de Versailles'; other species quickly look butchered and do not recover shape and vigor at all well after such a cutting. But pruning, I aver, has no exact laws, anyway. It is an occult art, prowess in which is possessed by some and not at all by others!

Here ends the cavalcade of ceanothi for Northwest gardens. No garden need be without some representation from this rich and diverse bounty of garden treasure. There is a type for almost every setting. Challenge, coupled with high promise of success, are inducements enough for the gardener. Give him the tempting reward of distinction in floral beauty and he will be all aglow!

Ceanothi for the Pacific Northwest

Name	*Height (feet)*	*Habit*	*Flower color*	*Hardiness in Puget Sound region*	*Garden use and local availability**
C. americanus "New Jersey Tea"	2-3	Low, semi-erect shrub	White	Quite hardy	Useful in naturalizing in open woodlands; blooms early summer
C. arboreus "Catalina Ceanothus"	10-25	arborescent shrub or small tree	Pale to deep blue	Needs some protection	Hardier forms are hybrids with *thyrsiflorus* ("Treasure Island," etc.)
*C. 'Autumnal Blue'		Evergreen upright shrub	Bright blue	Survived 1955 "freeze"	
*C. 'Blue Cushion' *(thyrsiflorus repens* x *dentatus)*		Low evergreen shrub	Blue	Not sufficiently tested	
*C. *burtonensis (impressus* x *thyrsiflorus)*	5-6	Dense, rounded bush	Deep blue	Not sufficiently tested	

Name	Height (feet)	Habit	Flower color	Hardiness in Puget Sound region	Garden use and local availability*
*C. 'Delight' (*papillosus* x *rigidus*)		Evergreen shrub	Blue	Not sufficiently tested	Spring-flowering
C. 'Gloire de Versailles' (*americanus* x *coeruleus*)	8-12	Deciduous, upright shrub	Bluish-lilac	Quite hardy	Widely available in Northwest nurseries
C. gloriosus "Point Reyes Creeper"	½-1	Creeping evergreen shrub	Lavender-blue	Quite hardy	Widely available in nurseries; ground cover for dry, sunny sites
C. gloriosus exaltatus "Navarro Ceanothus"	3-6	Erect, wide-spreading evergreen	Lavender-blue	Hardy	Occasionally available in nurseries; specimen plants in sunny shrub border
C. griseus "Carmel Ceanothus"	3-8	Low to medium-sized evergreen shrub	Deep blue	Hardy	Frequently available in nurseries
C. griseus horizontalis "Carmel Creeper"	¼-½	Creeping, evergreen shrub	Deep blue	Hardy	Locally available; fine for rockeries
C. impressus "Santa Barbara Ceanothus"	4-6	Erect, densely-branched evergreen shrub	Deep blue	Hardy against south or west wall	Locally available; exceptionally fine in foliage and flowers
C. impressus 'Puget Blue'	5-8	Erect, densely-branched evergreen shrub	Deep blue	Hardy	Spectacular variant developed at UW Arboretum
C. integerrimus "Deer Brush"	3-10	Erect, semi-deciduous of graceful, open growth	White, pale lilac deep blue	Hardy	Unavailable locally; selected color variants preferred
C. Lobbianus (*griseus* x *dentatus?*)	3-5	Erect, evergreen shrub	Bright blue	Not sufficiently tested	Unavailable locally
C. 'Mary Lake' (*thyrsiflorus repens* x *vineatus*)		Low, evergreen shrub	Deep blue	Not sufficiently tested	Rated highly in UW Arboretum (before 1955 "freeze")
*C. 'Mountain Haze'	2-4	Dwarf, compact	Dark blue	Not sufficiently tested	
C. papillosus "Wartleaf Ceanothus"	3-6	Spreading, evergreen shrub	purple to deep blue	Needs some protection	Infrequent in local nurseries; arching branches with glossy warty leaves
C. prostratus "Squaw Carpet"		Completely prostrate evergreen	Lavender-blue	Hardy	Native near Satus Pass, useful in rockeries
C. pumilus "Siskiyou Mat"		Smaller than *C. prostratus*	Blue	Hardy, but difficult to keep	Rarely sold; a natural for rock gardens
C. purpureus "Hollyleaf Ceanothus"	2-4	Upright or spreading evergreen	Purple-lavender	Not sufficiently tested	Light, well-drained soil in hot site
C. rigidus "Monterey Ceanothus"	4-6	Rigid, intricately branched evergreen	Purple-blue	Needs some shelter	Tiny leathery leaves; seldom available locally
C. Roweanus (a form of *C. papillosus*)	2-3	Spreading, evergreen shrub	Deep blue	Needs some shelter	Often available; much narrower leaves than *C. papillosus*
C. 'Royal Blue' (*thyrsiflorus repens* x *griseus*)	3-4	Low, spreading, evergreen shrub	Deep blue	Not sufficiently tested	Not available locally
C. sanguineus "Oregon Tea Tree"	10-15	Tall, arborescent, deciduous	White	Native, hardy	Not available in nurseries
C. 'Sierra Blue'	8-10	Erect, bushy	Dark blue	Needs some shelter	Grown at Arboretum
C. "Sky Blue" (*arboreus* x *griseus?*)			Bright blue	Quite hardy	Grown at Arboretum
C. thyrsiflorus "Blue Blossom"	4-8	Erect, evergreen	Deep blue	Quite hardy	Frequent in nurseries, often as named varieties; "Treasure Island," "Theodore Payne," etc.

(Continued on Page 60)

MAGNOLIA SALICIFOLIA 'Else Frye'

J. A. Witt

MAGNOLIA SALICIFOLIA is a Japanese magnolia of very considerable merit, hardy, free flowering, and with a fragrant lemony scent to its foliage. It often has an erect habit and in Japan may become a tree up to forty feet tall. The usual form in cultivation does have small flowers, generally not over four inches across when opened out, carried at the ends of slender shoots before the leaves are developed; a tree in full flower appears to be decked with little white birds.

There is in the center of the magnolia collection a willow-leaf magnolia about 16 feet tall with a narrow, erect habit and flowers half again as large as the type, usually in full flower by the first week in April, though it may vary as much as two weeks earlier or later. It was planted in its present position in April 1948, first flowered three or four years later and has continued to do so yearly without fail, each year surpassing the last in beauty and number of flowers. Its growth has been steady but not overpowering—probably averaging slightly less than a foot a year.

Our records show that the tree was obtained for the Arboretum from that generous and superb gardener, Mrs. T. C. (Else) Frye, who in turn got it from the Clarke Nursery Co., San Jose, California. It is altogether fitting that this lovely magnolia carry her name as a reminder of her lasting contributions to the Arboretum in particular and Puget Sound horticulture in general.

Following is a detailed description of the tree and its parts.

Tree—erect, with slender, glabrous shoots; young wood yellow-green, lenticellate, becoming brown with age.

Leaves—deciduous, lanceolate-elliptic to lanceolate, acuminate, base cuneate to rounded, 7-15 cm. long, 3.5-6 cm. broad, dull yellow-green above, glaucescent below, with a sparse covering of appressed, silvery hairs; petioles 7-18 mm. long, glabrous, reddish brown when young.*

Flowers—carried at end of young shoots, white, appearing before the leaves, usually in early April, faintly fragrant, 8-9 cm. long. Pedicels 4-6 mm. long, glabrous; sepals 3, lanceolate, 3-3.5 cm. long, 6 mm. wide, white tinged green and stained purple at base, soon deciduous; tepals 6, in two whorls of three, obovate-oblong, acuminate, tending to twist and recurve with age, white stained rosy-purple at base outside, outer whorl 8-9 cm. long, 3-3.5 cm. broad, inner 2.5-3 cm. broad, sub-equaling the outer; stamens numerous, glabrous, 13-14 mm. long, filaments pink, anthers creamy white with pale pink tip; gynoecium 6-7 mm. long, green, glabrous (fig. 4).

Fruit—usually produced freely; superficially it appears to be similar to that of other *M. salicifolia* plants, red-brown, opening to reveal reddish-orange seeds in October.

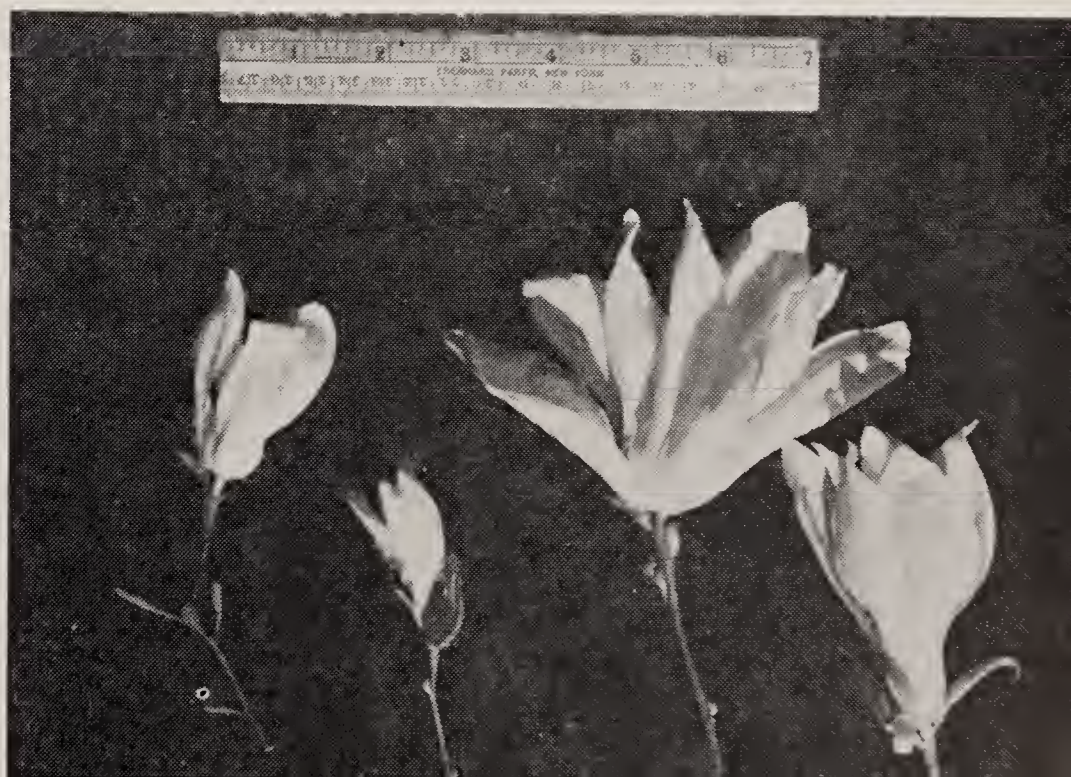
Material of *Magnolia salicifolia* 'Else Frye' has been sent for propagation to the Arnold Arboretum, Jamaica Plain, Mass.; the Strybing Arboretum, San Francisco, Calif.; and to the Clarke Nursery, in San Jose, California. We hope it will serve ornamental horticulture as well as its illustrious namesake!

*Fig. 21, *Arboretum Bulletin*, Vol. XXII, (3), p. 91, (1959)

Below:

Magnolia salicifolia 'Else Frye' on right; typical *M. salicifolia* on left, April 3, 1961.

Fig. 4 Photo by: J. A. Witt



Magnolia Sargentiana var. robusta

Donald G. Graham

THE WRITER imported from England in 1946 a small plant of this magnolia. It was moved several times, but finally acquired its permanent situs not far from a tall *Cornus Nuttallii* and close to a hemlock hedge; this, together with a larch to the north and a tall pine on the south, probably accounts for it surviving the November freeze of 1955, when *M. mollicomata, M. Campbellii, M. Sprengeri* var. *diva,* and *M. Veitchii* were all lost. I am inclined to believe that if they had been as well protected they might also have lived. As it was, *M. Sargentiana* var. *robusta* lost the upper third of its growth and suffered some trunk splitting, with which a pruning paint application fortunately coped.

The tree bloomed first in March 1959, but sparsely, and the blooms only measured about 6 inches across; this year, 1961, a much larger number of blooms appeared, each measuring 10 inches across; it was at its best the middle of March.

The tree is 25 feet high and has a spread of 12 feet. Some of its characteristics do not tally with the description in G. H. Johnstone's fine book "Asiatic Magnolias in Cultivation," (Royal Hort. Soc., London, 1955). My tree is not bushy in habit, but fairly tall and slender. Its proximity to other trees and early pruning to a single standard may account for this.

Its leaves are similar in shape and size to the leaf in Johnstone's book but are not emarginate (notched at the end). The leaf of the type specimen collected by Dr. E. H. Wilson in the Arnold Arboretum Herbarium is, however, not emarginate.

Below:

Magnolia Sargentiana var. *robusta* flowering in the garden of Mr. D. G. Graham, Seattle

Fig. 5 Photo by: J. A. Witt

Judging solely from my tree, I fully agree with Johnstone's tribute that "it is the most beautiful of all the magnolias." Its immense blooms are a pale mauve pink, of 12 tepals, with the outer side somewhat darker pink in color. The flowers, instead of being upright, are hanging partly at an angle, so that one is able to look up into them from the ground (fig. 5).

I believe this is the first tree of the species to bloom in the Pacific Northwest. I am told that it bloomed a few years ago in the Strybing Arboretum, Golden Gate Park, San Francisco, California.

Cistus in Southern Spain

Sampson Clay*

THE province of Huelva is in the extreme southwest corner of Spain, between the river Guadalaquivir and the Portuguese frontier, with a flattish hinterland to an Atlantic coastline on the south, and irregular hills increasing in amplitude to the Sierra Morena of about 4,000 ft. in the north.

Frost is virtually unknown, except perhaps at the higher levels, and the climate typically Mediterranean, with the rather scanty rainfall concentrated in late autumn and winter, to give a very dry, hot summer. The soil is generally thin, or even non-existent except in the valley bottoms, non-calcareous, and very, very poor, lacking both humus and nutrients.

In this hard environment *Cistus ladaniferus* L. is dominant over many square miles, giving a deceptively verdant look to the land as seen from the air. Particularly where the plant recolonizes ground after pathetic attempts at cultivation it often makes virtually pure stands of lanky shrubs, up to eight feet high and a few feet apart, with bare soil or eroded rock between them. At the beginning of March this year (a very early season, as in England), only the first flowers stood out as white flags, individually visible a quarter of a mile away, but ten days later in the earlier situations it was possible to assess the range of variation and savour the magnificence of the display. From 5 to 20 per cent of bushes were var. *immaculatus*. The maroon-black basal blotches of the type varied in size, shape and extent to which a slight halo of brighter red might surround them. One unique and magnificent flower bore huge blotches, each with a meteoric flare of bright crimson extending half-way up the petal. *Lavandula stoechas* was a frequent companion, and its solid bushy habit and masses of sombre purple were a wonderful contrast (fig. 6).

Cistus monspeliensis L. was the next most frequent species, later, with relatively small flowers and no better habit. So it was odd that both examples of the hybrid (*C.* x *Loretii* Rouy and Fouc.) with the gum Cistus were fine plants; one, a 4 ft. dome of much neater habit than either parent, just beginning a profuse display of two-inch, well-rounded, well-blotched flowers.

In full flower before either was *C. salvifolius* L., to my mind the best of all white Cistus; relatively dwarf, compact, floriferous, with finely shaped individual blooms, varying in the degree to which the petals are notched and the flower cupped, the best with something of the aspect of a fine single rose. Of *C.* x *florentinus* Lam., the hybrid of *C. salvifolius* and *C. monspeliensis,* I also found two specimens, one a struggling thing with poor flowers, the other very charming, an apple green rounded bush of over three feet, profuse with very neat white deep saucers with prominent yellow centres because they lacked any trace of stamens.

Near to this last plant was a form of *C. salvifolius* new to me, its foliage almost as white-felted as that of C. albidus. Here also the first flowers of *C. crispus* L., were open, vivid rose crimson, not without magenta, but rich and pleasing. I regretted very much that I had to go before this species was in full bloom, for its prevailingly dwarf flattened

*Dr. Sampson Clay, author of "The Present-Day Rock Garden" (Nelson & Sons, Ltd., 1954) has been a valued correspondent of The Arboretum for almost a decade.

habit (it can be over 3 ft.), rarity in cultivation, and richest colouring of all the genus (with the possible exception of *C. heterophyllus* Desf.) would probably make a survey of it in quantity particularly rewarding. Both *C. salvifolius* and *C. crispus* showed a preference for rougher ground than *C. ladaniferus* and *C. monspeliensis;* probably another way of saying that they function less readily as weeds of cultivation.

Definitely local was *C. albidus* L., almost certainly a reflection of its preference for calcareous soils. Of the half-dozen stations found for it three were by roadsides, and the most extensive at some altitude in the Sierra Morena where a more varied flora was of a type suggesting richer ground. Another site was particularly interesting; a steep north-facing slope, still noticeably damp, again with a richer flora, something approaching a perennial turf, including a saxifrage of *S. granulata* persuasion. Relatively small numbers of *C. albidus* were not particularly variable, and I did not see, for example, the white, or the pure rose pink without hint of lilac, that I have found amongst acres of the species in the Alpes Maritimes in southern France. What I did find was a quite obvious *C. albidus* x *C. crispus* (*C.* x *pulverulentus* Pour.), a handsome plant, rather nearer to C. *albidus* than the form of this hybrid which is grown in England as *C.* "Sunset," or sometimes as *C.* "crispus" itself.

Later still, so that I had seen no open blooms when I left Spain on March 17th, was *C. populifolius* L. Though quite frequent, this too was inclined to be local, favouring steep slopes, especially at the bottom of little dips and gullies. Its foliage is so distinctive that there was no difficulty in picking out its hybrids with *C. salvifolius* (*C.* x *corbariensis* Pour.) and with *C. ladaniferus* (*C. Aguilari*

(Continued on Page 60)

Below:

The gum Cistus in Southern Spain, with *Lavandula Stoechas,* and *Pinus pinea.*

FIG. 6 PHOTO BY: DR. S. CLAY

Summer Flowering Heaths

N. Dering Marrett*

WE ARE very fortunate here in the Pacific Northwest, that we can, perhaps, grow the widest selection of plants from the temperate zones of the world of anywhere in the United States, and, such is our climate, can grow them with comparative ease and success. Not the least among these plants are the heaths and heathers, which do very well for us.

The summer flowering heaths are only a small part of the whole family, yet among their ranks are some of the finest varieties we can grow. They associate themselves well with other plants in rockeries, shrub borders, or can be used very effectively as ground covers for banks or slopes, and in many other ways add color, both in flower and foliage, to various flower beds around the home.

Their requirements are few and simple; an open sunny situation, an acid soil, good drainage and a liberal supply of peat or peat moss. While the latter is admittedly very beneficial to the plants it is not absolutely essential. They will grow quite well without it, providing there is a supply of humus in the soil.

The fine-leaved or twisted heath, *Erica cinerea,* is quite hardy in the Northwest, as are all the other heaths mentioned later on. It is a native of northwest Europe and is found in many parts of the British Isles. The named varieties, of which there are many, flower from June until September and seldom reach a height of more than 15 inches. They will stand drought better than many other kinds and are splendid for massing on banks and slopes where they will give a fine display.

Among some of the best are *E. cinerea* 'Alba,' compact in habit with light green foliage and long white flower spikes. The dwarf form 'Alba Minor,' is even more compact, only six inches, endearing itself to all who see it. 'Atropurpurea,' with long sprays of ruby-red bells, is one of the finest and an outstanding heath. 'C. D. Eason' can always be relied on to give a good showing with its long sprays of bright red flowers and seems to stand far more abuse than any of the other varieties. In all a most satisfactory plant.

The excellent variety *E. c.* 'Golden Drop' is one of the best foliage plants of all heaths. Although a shy flowerer, its foliage alone makes it indispensable. The new growth in spring is a golden yellow, turning, as the year passes, to shades of copper and bronze in the fall, which in the winter becomes a deep striking red. The plant is a compact nine inches high. 'Golden Hue' is upright, twelve inches tall, with golden foliage which turns a copper color in the winter. These two heaths, when planted among the darker green varieties, give a pleasing contrast. 'P. S. Patrick' grows to one foot and is quite the best of the purple varieties. A strong, sturdy grower with long spikes of deep purple produced over a long period. One to be remembered.

Erica ciliaris, the fringed heath or Dorset heath, was introduced into America from England in 1773. Begins to bloom in July and continues through October. Of spreading habit, with pale green foliage and strong spikes of rose-purple flowers, it will reach a height of two feet. 'Mrs. C. H. Gill' is a first class variety with deep green leaves and many rich red bells. 'Stoborough' has large pure white flowers freely produced. Growing as tall as two feet it is vigorous and outstanding. 'Wych' is a very pretty plant, a foot in height, with numerous flesh pink flowers. An attractive variety which can be used with good effect in landscaping.

The cross-leaved heath, *Erica Tetralix,* a native of northern and western Europe, was introduced into this country in 1789, and has become naturalized in Massachusetts. One of

*A more detailed discussion on some of the heather by Mr. Marrett who previously wrote on this subject in the Bulletin Summer 1959.

the hardiest of the species, which seems to like a moist position in preference to a dry one. The flowers are carried in terminal clusters from June until October. 'Alba Mollis' is a striking and pleasing variety which has received an Award of Merit from the Royal Horticultural Society in England. Its silvery gray foliage and white flowers, borne over a long period, make an impressive contrast when grown among other heaths, or as a foreground planting in a shrubbery.

The grey-green foliage, with the unusual salmon-pink flowers, gives *E. T.* 'Darleyensis' a charm all its own, which always attracts attention. 'Mackaiana,' discovered in western Ireland, spreading in habit, and usually about nine inches in height, has bright pink flowers. One of the delights of this plant is the new golden growth in the spring, tipped with pink. It makes a good ground cover and is most effective when planted in quantity. Another delightful variety is the double form, 'Mackaiana Plena,' a little gem when in flower and showing off its large double rose-pink flowers. *E. T.* 'Praegeri,' dwarf and compact, growing with many clusters of bright pink bells, is excellent for the rock garden and flowers almost continuously.

The Corsican heath, *Erica terminalis (stricta)* is the only summer blooming species that does not object to lime. It has a distinct, erect, bushy habit, reaching five feet or more in height, with soft rose colored flowers from July onwards to fall. Makes a good hedge, if desired, and will stand clipping. The dead flowers fade but remain on the plant throughout the winter. They turn a rich brown and add a warmth of color. It is a species worthy of wider popularity.

The Cornish heath, *Erica vagans,* is a valuable and useful garden heath flowering towards the end of summer from August onwards. There are three varieties which I consider to be outstanding and cover the color range of this species. All three have received an Award of Merit from the Royal Horticultural Society.

'Lyonesse' is still one of the finest whites. The pale brown anthers, which extend beyond the corolla, add greatly to the beauty of this plant. 'Mrs. D. F. Maxwell,' two feet high, ranks with the best of all hardy heaths. Long spikes of deep cerise flowers rise above the dark green foliage. A very beautiful variety and widely grown. The russet colored dead flowers also have a special attraction of their own and add to the interest of the plant during the months of winter. Very easy to grow, it quickly establishes itself. 'St. Keverne,' very similar in habit, but not quite so vigorous in growth, gives us many flowers of a clear, bright rose-pink. An old plant, but still one of the finest Cornish heaths.

Erica Williamsii is a natural hybrid between *E. vagans* and *E. Tetralix,* producing masses of pink blooms from July to September. The plants are bushy, about twelve inches high, with the new growth turning a bright yellow. A variety well worth cultivating and always attractive to look at. *Erica* 'Dawn' *(ciliaris* x *Tetralix)* has large deep pink blossoms all through the summer and autumn months. This fine hybrid makes an excellent ground cover plant and is easy to grow. *Erica Watsonii,* another of the same parentage, is smaller with a spreading habit and pink flowers from July to October.

Although not an Erica, the genus *Daboecia* is a closely related member of the heath family and is often called St. Dabeoc's heath, so named after an Irish saint. *D. cantabrica,* well known in the Northwest as the Irish bell heath, is a native of western Europe and is the bog heath of Connemara in western Ireland. It is an upright evergreen shrub, two feet and more in height, requiring a damp peaty soil, and likes to be planted in quantity, which will afford each plant protection from the cold winter winds. Trimming the plants in early spring will keep them bushy and increase the flowers, especially on the older plants. Large, rose-purple bells stand well above the leaves and bloom from June to October and sometimes longer. The white form 'Alba,' with its pure white flowers, is very charming and well worth growing. The form 'Atropurpurea' has deep rich purple

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Some of Our Favorites☆

Garrya Fremontii

It was about ten years ago that *Garrya Fremontii* first came our way and it was easy to see that several days had passed since the small, tired branchlet had left the parent plant. Being a devotee of the Else Frye school of propagating—"Take a cutting when you can get it"—we optimistically trimmed it, dipped it into rooting hormone and inserted it in a cutting mixture of 2 parts sand and 1 part peat moss. It survived our all-too-frequent inspections and grew in the protection of a cold frame until it was large enough to be planted out.

Three plants of *G. elliptica* were flourishing along the south side of the house, in the hottest, driest situation that we could give them. So, *G. Fremontii* joined them, and when they were brushing the eaves and putting forth their first tassels, it had stretched to almost eighteen inches.

During that villainous November of 1955, two of the tall Silk Tassel bushes went the way of most of our cherished garden plants. The one survivor sent out a few spindly shoots that were given all of the tender, loving care lavished upon any ailing member of our family. *G. Fremontii* had lost only the tips of a few branches and behaved as if this had been just the stimulation for which it had been waiting. It is now a vigorous, five-foot mass of handsome, shiny green leaves and has bloomed heavily for several years, though its rather short, pistillate tassels have faded away without pollination.

This year *G. elliptica* once again reached the eaves of the south porch and produced two or three dripping tassels of gray-green flowers. That did the trick! *G. Fremontii* is drooping under the weight of its still-green fruits and we are impatiently counting the days until we can plant the seeds of what has to be a hybrid *Garrya*. While we wait we dream. Will it have the wonderful long tassels of *G. elliptica* with the varnished foliage and the greater hardiness of *G. Fremontii?* We can dream, can't we?

PAT BALLARD

Parrotiopsis Jacquemontiana

Acquiring and planting seeds of all kinds has been a favorite hobby of my husband's for some years. The work of planting, caring for, and transplanting sometimes leads to disappointing results, but often brings us some of the most interesting and desirable additions to our garden. This was certainly the case with a few seeds he received of *Parrotiopsis Jacquemontiana*. Only one seedling survived, and this is now a beautiful 5-ft. specimen. The shape and veining of the leaves give a clue to the family—*Hamamelidaceae*. The leaves resemble those of *Corylopsis,* but are more rounded at the tip. *Parrotiopsis* is closely related to *Fothergilla alnifolia,* but the inflorescence is capitate, appearing as a head of golden stamens surrounded by white, uneven involucral bracts. This we have to look forward to, for our young tree has not bloomed as yet. Thanks to Curtis' *Botanical Magazine,* Vol. 122, we were able to see a beautiful color plate (No. 7501) of the inflorescence, which has kindled an interest to see it in bloom. Up until now I have been satisfied with the shape of the tree and the foliage. They are lovely enough by themselves to make it one of my favorites.

P. Jacquemontiana was discovered in Kashmir by Dr. Falconer in 1836; this region of the Himalayan ranges is the center of its distribution. It is a shame that this unique witch hazel from such a botanically-rich area of the Himalayas has not found wider use in cultivation.

MAREEN S. KRUCKEBERG

☆Won't You Send Us Yours?

RHODODENDRON 'Gene'

J. A. Witt

ANYONE who has ever raised Rhododendron species from open pollinated plants knows well that the chances of getting the pure species are not especially good, particularly if the seed comes from a garden with many rhododendrons flowering concurrently. Many of these growing in the University of Washington Arboretum's collection came from just such seed, with the result that often the "species" have badly mixed blood. Occasionally one of these natural hybrids turns out to be a superior plant and deserves to be named and distributed. Such a plant is 'Gene.' It was raised from seed of *R. spiciferum* received from the Royal Botanic Garden, Edinburgh, Scotland, in 1944. Of some thirty-odd plants grown this one was so obviously different that it was not planted with the rest of its sister seedlings, but kept back in the lath house, where it grew happily for about fifteen years. It was such a handsome plant when in flower that some Rhododendron collector "collected" it, in the spring of 1959. By good fortune we had propagated it earlier and now have a small stock built up (fig. 7).

Comparing the foliage and flowers of 'Gene' with its sister seedlings indicates that its other parent could be *R. ciliatum,* since the hybrid has the broad ciliate leaves and frilled corolla lobes of that species. Both putative parents flower about the same time, with *R. spiciferum* blooming perhaps two weeks later than *R. ciliatum.* On Page 51 is an analysis of the key characters of *R. spiciferum, R. ciliatum,* and 'Gene.' From this it may be seen that 'Gene' appears to be quite intermediate between the two.

It is a sincere pleasure to name this fine rhododendron for Miss Gene Webb, Executive Secretary of the Arboretum Foundation, to whom the staff of the Arboretum is so much indebted in so many ways.

R. spiciferum	'Gene'	*R. ciliatum*
Leaves		
linear lanceolate to narrowly elliptic, 1″ to 1¼″ long, ⅜″ to ⅝″ broad, ciliate margin, bullate and finely setose above, densely scaly and setose below	elliptic to oval, bullate, scaly and setose above, densely scaly and somewhat setose below, 1″ to 2¼″ long, ½″ to 1″ wide	elliptic to oblong-elliptic, reticulate, setose above, densely scaly below, 1½″ to 3½″ long, ⅔″ to 1½″ broad
Inflorescence		
axillary towards apex of shoot forming a pseudo-spike	both terminal and axillary forming a dense round panicle	2-4 flowered lax terminal raceme
Flower		
rose-purple to white stained rose	cyclamen purple	white, stained pink
Calyx		
small lobes set with lanate hairs, scales dense at base, lax on lobes	Intermediate, glabrous except for ciliate hairs on edge of lobes and with few scattered scales	large, scaly at base only, lobes with ciliate hairs
Corolla		
narrowly tubular, ½″ long, scaly on back of lobes	funnel shaped, 1¼″ long, few scattered scales on back of lobes	funnel-campanulate, 1½″ long, glabrous outside
Stamens		
10, exserted	10, exserted	10, as long as tube
Ovary		
scaly and pubescent	scaly	scaly
Habit		
loose and with long thin stems	compact, low-growing	open growing but not loose

The International Rhododendron Conference

Portland, Oregon, May 11th to 14th, 1961

Pat Ballard*

FOR many West Coast rhododendron enthusiasts the International Rhododendron Conference was a new and exciting experience. To the uninitiated it is inconceivable that several hundred seemingly sane individuals could spend four days and nights talking about nothing but rhododendrons; for the participants the sessions were not long enough and the days were all too few.

The rhododendrophiles began converging upon the Multnomah Hotel on Wednesday and it was immediately apparent that the staff and management had entered upon a conspiracy to keep us completely happy. That evening the delightful home of the Portland Garden Club was teeming with delegates and the overflow was streaming along the paths of the beautifully planted garden. The warm, friendly atmosphere left no room for any awkward silences—indeed, this was the keynote of the Conference. Everyone was most approachable—generous with his knowledge, his experience, and his good will. The Portland Chapter of the American Rhododendron Society set such a high standard of hospitality that the rest of us will have difficulty in equalling their example, should we have an opportunity. Everything possible was done for us and there were moments when we felt the impossible had been achieved.

The excellently planned program ran smoothly and punctually. On Thursday, the eleventh, registration was the first order of the day and we were able to sign up for the Sunday garden tours. Luncheons and dinners for the entire group made it possible to visit with new friends from the next county or from lands thousands of miles away.

*We feel fortunate in having such a competent "reporter" for this notable event.

Rhododendron 'Gene' flowering in the lath house, early April.

Fig. 7 Photo by: J. A. Witt

Only the first session was open to the public, and that program had been planned with consideration for the Northwest gardener. Mr. P. H. Brydon, formerly of Salem, Oregon, but now Director of the Strybing Arboretum, San Francisco, California, was the first speaker. His subject was "Rhododendron and Azalea Varieties for the West Coast," and the accompanying slides featured rhododendrons that are suitable for gardens from Carmel and Monterey to Seattle and British Columbia. Our fingers were not fast enough to record every tempting specimen, but *Rhododendron Aberconwayi,* 'Bright Straw,' 'Exbury', 'Ballerina,' 'Golden Sunset,' and 'Naomi' are underscored in our notes. We were amazed at the use of eucalyptus leaves and bark (chipped and spread evenly) as mulch for rhododendrons. However, Mr. Brydon cautioned that, if eucalyptus was available to us, this mulch should never come within the dripline and said the Strybing Arboretum uses pine needles and peat under the plants.

Mr. Wales Wood, A.R.S. Director from St. Helens, Oregon, showed us "Dwarf Rhododendrons in the North West." Among the treasures that were added to our wish list were 'Rose Elf,' a dwarf *R. racemosum,* a pink *R. lapponicum, R. Forrestii* var. *chamae-Thomsonii* (also pink), *R. Wiltonii, R. Roxieanum,* 'Remo,' 'Thalia,' and *R. spinuliferum.*

After dinner on the first evening we were welcomed to Oregon, most graciously, by Governor Mark Hatfield, and to Portland by a representative of the Mayor.

Dr. Harold R. Fletcher, Regius Keeper of the Royal Botanic Garden, Edinburgh, gave us an introduction to the "Rhododendrons at the Royal Botanic Garden, Edinburgh, and Benmore." Some 400 species grow in the former garden, in which the highest point is about 100 feet above sea level. The soil is sand overlying clay, with the addition of peat and leafmould. The small-leaved species grow in the Peat Garden at Edinburgh, the larger leaved at Benmore in Argyll, where they enjoy a 90-inch annual rainfall. Dr. Fletcher said that he feels that certain species are under-rated in our various handbooks but that the new A.R.S. "Rhododendrons for Your Gardens" errs a bit less than some others. He cited the usual low rating of *R. ponticum* and stressed its great horticultural value as a shelter belt for less hardy varieties and its beauty when planted in a mass on a bank. He feels that in certain situations it is well worth growing. Habit and foliage are as important as the flowers. *R. Nuttallii* is usually rated 4-star for its flowers, 1 to 2-star for its habit, so he suggested a formula 4/1-2 as an indication of its qualities. *R. lepidostylum,* with its handsome foliage and somewhat less spectacular flowers, received the rating 0/2-4 or 0-2/2-4. His fine transparencies gave us visual evidence of the reason for his ratings, and I am sure every rhododendron addict will be most interested in this paper when the proceedings of the Conference are published.

May 12—9:30 A.M.

Mr. Frank Knight, Director of the Royal Horticultural Society's Garden at Wisley, spoke to us on "Rhododendron and Azalea Trials at Wisley." Hardiness trials were held at Exbury in the late 1920's, but were moved to Wisley in 1938 because of the inaccessibility of Exbury for the public. The purpose of the Trials is to assess the merits of hardy rhododendrons for garden use.

Wisley's Rhododendron Trials garden is about 130 feet above sea level and the fairly open but tree-dotted area slopes to the north. The soil is basically yellow sand with a pH 5.5, and the natural growth is birch, heather, and bracken. The annual rainfall is 24.15 inches per year, and the temperature ranges from a maximum 92° in 1957 to a minimum 8° in 1947. Spring frosts are a factor but the sloping site helps this situation to some degree.

Cut sprays of new varieties are submitted to the Rhododendron and Camellia Committee and suitable plants are chosen by a show of hands. Selected plants are then sent to Wisley and the unlabelled but numbered plants are inspected by a Trials sub-committee which meets four times each year. Reports of the sub-committee are then presented to the Council. The highest award is the First

Class Certificate, for great excellence, and is selected by a 3 to 1 majority. The Award of Merit and the Highly Commended are given to noteworthy plants, which must receive a 2 to 1 majority. Any plant growing in the Trials area for ten years without receiving an award may be removed, but this is not mandatory. All plants remain the property of the sender, who may remove cuttings by permission of the Council. One meeting of the Trials Committee is held at Edinburgh each year.

Of the 313 hardy rhododendrons which have been selected for trial, only 16 have been given the F.C.C. award, 68 the A.M., 78 the H.C., and 126 have been deleted. Of the 340 deciduous azaleas tested, only one has received the F.C.C., 37 the A.M., and 192 have been deleted. It is the work of these Trials Committees that makes many of the finest plants available to the horticultural world. In reply to a question, Mr. Knight explained that the Award of Garden Merit is given only to plants which should be grown in all gardens and these are selected *only* on the recommendation of the Wisley Advisory Committee.

Dr. John Wister, the gallant dean of American horticulture, then gave us a most informative resume of the accomplishments of C. O. Dexter, Guy Nearing, and Joseph Gable, three great pioneer breeders of the eastern United States. He reminded us that European growers recognized the merits of our American azaleas long before we did, and that *R. maximum, R. catawbiense, R. carolinianum,* and the Himalayan *R. arboreum* were taken to England in the latter part of the 18th century and the first years of the 19th. As early as 1840 English nurserymen were offering hardy hybrids from these evergreen rhododendrons.

There are no records of American azalea breeding until after 1920. It was during the First World War that Joseph Gable's military company was halted on the road in front of Hillier's Nursery, at Winchester, England, and the view of the rhododendrons growing there was the impetus that led him to make his first rhododendron crosses. Within a few years many hybrids were growing around his home but little interest was shown in them because "they were only natives." When he became interested in evergreen azaleas the story changed, and some of his best known crosses are 'Apricot,' 'Big Joe,' 'Campfire,' 'Caroline Gable,' 'Mary Gable,' and many that are unnamed and unsung. Early blooming lepidotes are the parents of many of his crosses. Dr. Wister says that Joseph Gable is so modest that it takes repeated questioning to gain even a little information.

Guy Nearing was a poet, landscape designer, Shakespearian actor, and had a diversity of activities before he devised his system of rooting cuttings without heat. The Nearing Frame should have a north exposure, out of the direct sun. He and Mr. Gable exchanged plants and information but, like Mr. Gable, he worked alone. He still lives alone and raises about 10,000 small seedlings each year. These are left out even during the first winter so that only the hardiest survive. Mr. Nearing maintains that dogmatic statements about culture and hardiness are without validity.

C. O. Dexter was a retired manufacturer. The Cape Cod area where he lived has a good deal of fog, both in the summer and winter, and has a fairly moderate climate for that part of the United States. He had an opportunity to buy fine plants from nursery-grown seedlings—plants of *R. Fortunei* types and hybrids, as well as others. E. H. Wilson and Dr. C. S. Sargent were delighted to find a qualified grower so close to Arnold Arboretum. It is tragic that he did not keep adequate records. He worked on a tremendous scale. As plants bloomed, the finest were numbered. He apparently gave away great numbers of plants, flats and flats of tiny seedlings. The University of Washington Arboretum has an excellent collection, received 1938-39. *R. decorum, R. Fortunei, R. Smirnowii* and other hardy species served as parents for his crosses. Dr. Clement Bowers and Dr. Henry Skinner became concerned about the dispersal of inferior stock under the Dexter name and invited Dr. Wyman, Dr. Wister, and Mr. Vos-

berg to make selections of Dexter seedlings from gardens in the N.E. Twenty-eight collections in all have been made; some of them have now been named, selections for the range of habit, for important variations, for color and season of bloom.

The great importance of these three breeders lies in the fact that they showed Eastern American growers the folly of relying solely on British and West Coast breeders for extremely hardy hybrids. The work of these and others will lead to more use of hardy rhododendrons in the Northeast. Some young members of the American Rhododendron Society are taking over the work of these able pioneers.

Dr. C. J. Gould, of the Western Washington Experiment Station, Puyallup, Washington, spoke of "Diseases of Rhododendrons in the Pacific Northwest." Dr. Gould said that the more we grow rhododendrons, the more trouble we will have with them. He suggested, perhaps somewhat facetiously, that Dr. Fletcher's rating system be extended to include hardiness, resistance to sunburn, insect pests, and diseases. The Pacific Northwest and England are similar in growing conditions, and thriving growth is the key to disease control. As for the particular diseases found in this area, Dr. Gould says we can be afflicted with practically everything that exists elsewhere. Rhododendrons, as a group, are one of the healthiest groups of plants, but the Experiment Station has more inquiries about rhododendrons than about any other plants. Culture is extremely important in growing healthy plants and too much water in heavy soil, or hardpan beneath, can cause water suffocation. Rhododendrons should not be planted next to a downspout. Too little water can also be a factor. Under cold conditions, water does not move into the root area fast enough, and the same problems are present during dry periods in the summer. Sun damage can be intensified by planting near a heat-reflecting surface. Too late fertilization may be a factor in frost damage. Care should be taken in preparing the soil around homes, in order to avoid calcium poisoning brought on by cement rubble and other lime residue.

To prevent seed decay and damping-off, he advised treating the seed with fungicide, the use of sphagnum moss as a planting medium or sprinkled over the top of other seed composts. Air circulation is most important. He also suggested drenching the soil with one of the commercial mercury compounds, but stressed the importance of reading the directions carefully. A well-balanced fertilization program before cuttings are taken would be helpful. He mentioned "University of California, Manual No. 23," which contains all the steps necessary for healthy cuttings.

Shoestring fungus is not too serious but it is widespread. Drainage is an important factor in controlling this disease which is found on elders, maples, willows, etc. Digging away soil around the roots will expose the black shoestring-like runners, if they are present. If the plant is not valuable it should be cut down and burned; removal of the soil from around the trunks is helpful if you want to save the affected plant. A new treatment has been developed to combat this fungus but is not on the market as yet.

Leaf damage may be due to many things, including fungi, frost damage, sun spots, or just a general weakening of the plants. There are three kinds of rust that attack *R. macrophyllum,* and one of these originates on *Ledum*. We cannot give all the useful information that Dr. Gould included in his paper but we urge you to watch for the publishing of the Conference *Proceedings*.

"Rhododendrons at Leonardslee; the Loderi Hybrids," was the subject of Sir Giles Loder's paper. Leonardslee is about 40 miles south of London, in Sussex. The Loder family came to this estate about 1855 and on old maps there is an area designated as the "American Garden." It may have been so named for the sequoias planted then, or for the Eastern United States' rhododendrons. The natural soil is of heavy Sussex clay, in which healthy rhododendrons would wither within a year. Fortunately, there is a valley that makes all the difference, scenically and horticulturally, where quite tender varieties

of rhododendrons may be grown on the higher slopes. The great size of the plant material shown in Sir Giles' slides was spectacular. A large *R. luteum* was the identical plant we have seen pictured in J. G. Millais' famous book, *Rhododendrons*. *R. arboreum* hybrids, 30 or more feet tall, were flowering right down to the ground. One was more than 40 feet high. *R. Thomsonii* of great size has the beauty of peeling bark, in addition to the contrasting leaves and quantities of brilliant red flowers. Countless Japanese maples were a perfect contrast for azaleas. The first 'Loderi' came from a *R. Fortunei* x *R. Griffithianum* (the pollen was obtained from a neighbor's *R. Fortunei)*. The cross was made in 1901 and the first flowers appeared in 1907. I hope that Sir Giles' paper will include the name of all of the magnificent rhododendrons that were shown to us.

Mr. H. J. Grootendorst, of Holland, is the third generation in the largest export nursery for trees and shrubs in Boskoop. There are about 700 growers in this low, flat, water-dissected district in western Holland—the most concentrated nursery area in the world. The climate is colder than that of the Pacific Northwest and the 'Loderi' hybrids cannot survive more than a few winters. Rhododendrons must have a hardiness rating corresponding to the English "B" to survive. Mr. Grootendorst said they have a good summer every ten years or so. There are no big rhododendron gardens in Holland and no wooded areas in this particular region. The soil is sandy or hard clay.

The rhododendrons that are grown are expressly for export abroad—Great Britain, France, Scandinavia and the United States. Long-pedicelled flowers are discouraged, since wind damage is common. Even many British crosses that are hardy need some protection. He feels that another 20 years is needed for the development of better flowered rhododendrons.

Once again, we wished we were expert in shorthand for we could record only a few of the many fine specimens mentioned. 'Peter Koster,' 'Marinus Koster,' 'Earl of Donoughmore,' 'Lamplighter,' 'Lady Stuart of Wortley,' 'Koster's Yellow,' 'Diane,' 'Mrs. Betty Robertson,' 'Alice Street,' 'Floriade,' ("the best in the last 10 years"). The most intriguing was a cross between *R. racemosum* and the Japanese evergreen azalea, 'Hinemayo.'

In the afternoon of May 12 a Symposium on "Rhododendrons for Colder Climates" was held. Herr Dietrich Hobbie of Linswege, N.W. Germany, has been hybridizing for 22 years and his unusual combinations of parents have brought forth some attractive and very hardy rhododendrons. He has used *R. Williamsianum* in some 60 different combinations, and *R. Forrestii* var. *repens* has passed its best qualities on to many offspring—some of them of surprising stature. The pure white, hardy species, *R. puralbum,* has been used, and the white form of *R. brachycarpum* var. *montanum*. It is 2½ kilometres (about 1½ miles) around the woodland where Herr Hobbie grows his rhododendron stock. Some of the interesting crosses were: *R. carolinianum album x R. ciliatum, R. carolinianum x R. lutescens, R. Williamsianum x R. dichroanthum,* 'Faggetter's Favourite' *x R. Williamsianum, R. discolor x R. dichroanthum,* 'Doncaster' *x R. Williamsianum,* 'Purple Splendour' *x R. repens,* and many others. *R. Wardii,* collected by the Sherriff expedition, produces hybrids that are all free-flowering.

David Leach, from Brookville, Pennsylvania, was the second speaker in the symposium on "Rhododendrons for Colder Climates" and presented a most interesting chart dealing with the "Suggested Plausible Dominance for Elepidote Rhododendron Flower Color Inheritance." He spoke of Anthony Waterer, an English breeder of hardy rhododendrons, and said that more than 90% of all of his hardy hybrids were produced in a climate where he himself had no means of testing them. Mr. Waterer used *R. catawbiense* as a parent for many of his hybrids. Mr. Leach said that, interestingly enough, *R. catawbiense* var. *album 'Catalgla'* just does not produce white offspring. He maintains that if there is even a faint blush at the bases of the stamens, or in the bud, or in

the base of the petals, *it is not truly white.* And that, while *R. maximum* hybrids are promising in crosses for the eastern U. S., *R. maximum* itself is not so successful. *R. Smirnowii* x *R. brachycarpum* offspring are hardy in the Northeast, but their progeny offer the best contribution as grandparents, rather than as parents. A hybrid, to be successful for the Northeast, must be able to stand temperatures of 20° below zero without losing its flower buds. Lepidote rhododendrons are, generally speaking, hardy in that area. 'Dora Amateis' *(R. carolinianum x R. ciliatum)* is hardier than 'Praecox' *(R. ciliatum x R. dauricum.) R. yakusimanum* went through 32° below zero in David Leach's garden.

Mr. Edmond Amateis, of Brewster, N.Y., was unable to be with us and Mr. and Mrs. Ted Greig, of Royston, Vancouver Island, Canada, were most interesting substitutes. Mrs. Greig wrote the paper, "Rhododendrons on Vancouver Island" and Mr. Greig presented it to the Conference. Those of us who live in the Northwest are well aware of, and grateful for, the robust good health and exceeding hardiness of the plant material that comes from their nursery, situated just south of Campbell River, on the eastern shore of the Island. Thirty years ago the Greigs went to Royston for a vacation and they have been there ever since. They bought the stock of an alpine nursery, in which rhododendrons were included only because the former owner could not resist any plant. Royston is much colder than the site of the former nursery; it has late springs, early fall frosts, dry summers, and wind. The fine specimens that come through such adverse conditions are in great demand. They spoke of early rhododendron growers on the Island, including George Fraser and C. T. Hilton. There are two native rhododendrons on the Island; *R. albiflorum* is found at an elevation of 2,500 feet and up, but sulks at lower altitudes; *R. macrophyllum* is found in only one spot on the Island, a bit north of Nanaimo.

After dinner that evening Dr. A. N. Roberts, from Oregon State College at Corvallis, talked on "Mulches for Rhododendrons and Azaleas." He gave us just the highlights of his paper, which will be printed in the proceedings. He said that there is no great change in soil pH rating with the use of mulches. Organism changes under mulches can present a problem. They will, of course, reduce fertility in decomposition. He felt that we do not yet know just how important the mycorrhizic fungi are. Mulching improves growth, flowering, and appearance. Types of mulch mentioned were paper, sawdust (in some tests showed better results than straw), chopped fir bark, shredded shingle tow (not too successful), alder (may contaminate soil), and pine needles. In choosing a mulch the gardener must consider his objectives; is he using it to prevent loss of water, as a weed control, to aid soil productivity, as protection against frost, to form humus, or purely for esthetic purposes? Mulching may be detrimental, may increase some disease problems, or cause a nitrogen deficiency in the soil. The gardener must decide what is of most importance to him and make his choice.

The second speaker of the evening was Dr. Henry T. Skinner, Director of the National Arboretum, Washington, D.C. "Classification of the Native American Azaleas" dealt with the azaleas of the sub-series *Luteum,* omitting *R. Vaseyi* and *R. canadense.* Information for this study is stored on punched cards, and 80 characters of the 8,000 specimens collected are recorded. These azaleas are low-spreading or upright, sometimes stoloniferous, deciduous *(R. serrulatum* holds its leaves most of the year), have subregular tube-like flowers in several to many-flowered inflorescences, are early-flowering in a range of colors from white to pink, carmine or crimson, or yellow to orange and scarlet. The bristle-like, often glandular, hairs of the ovary are distinctive. This study dealt with the geographic plotting of characteristics of 14 species:—*R. canescens,* usually pink but with great variation in flower color, has a white form which roots readily from cuttings; *R. nudiflorum; R. roseum* (mention made of the glandular form found in the Blue Ridge Mountains); *R.*

alabamense; R. atlanticum—one clone will often cover an area of 20 acres; *R. oblongifolium; R. viscosum. R. austrinum* is closely allied to *R. luteum* of Europe. *R. speciosum* (also known as *R. flammeum)* is found in the area of the Savannah River in Georgia. It is non-stoloniferous. *R. calendulaceum* is variable in some characteristics but not usually stoloniferous. *R. arborescens* likes moist situations. *R. Bakeri, R. serrulatum,* and *R. prunifolium* complete the list. The battery of my penlight gave out in the early part of this very informative paper and I am very impatient to see it in print since I know it will be the basis for much new information on eastern American azaleas.

The first paper on Saturday morning, the 13th, was an account of the beautiful but generally tender *Maddenii* series on the Pacific Coast, by Dr. Paul J. Bowman of Fort Bragg, California, and Mr. R. L. Hudson, of Golden Gate Park, San Francisco. Since these plants are probably better grown in northern coastal California than anywhere else in the United States, we were able to hear and to see from the excellent pictures shown just how varied and lovely they can be under suitable conditions. For most of us they are only possible in pots or tubs, in which they fail to achieve the size and flower quality attained when growing happily outdoors.

The remainder of this morning was devoted to a Symposium on "Breeding Developments in the United States." Dr. Clement G. Bowers, author of the recently revised "Rhododendrons and Azaleas," led off. He reminded us that cultural requirements are completely dissimilar on the northeastern and western coasts of North America. It is time for every breeder to give a long hard look at the conditions and requirements of his area. Rhododendrons grow from 15,000 feet elevation down to sea level, on bleak hillsides and near swamps, in a myriad of plant associations. Certain areas are not growing all that they could and are not taking advantages of breeding possibilities of the natives. From the North East to Chicago, there is an area with a large population that is hungry for rhododendrons and comparatively few plants are suitable. We must fit the plants to the situation and this offers great possibilities for someone to do something really valuable for his own region. Dr. Bowers set up criteria for breeders—an awareness of the adaptability to his own area, hardiness, color, size and habit (large, medium, and small), to fit landscape design requirements.

During the early years of his association with rhododendrons Dr. Bowers was prodded by Henry Hicks, a nurseryman on Long Island, to do something about hybridizing them. E. H. Wilson had a list of twelve rhododendrons that had done well in Boston. Dr. Bowers started with these and, making a checkerboard diagram, crossed in every direction. The progeny were raised by Mr. Hicks but Dr. Bowers felt that, though he got a Joseph's coat of many colors, none was very good. He got some plants that bloomed out of season, both earlier and later, and did obtain some scientific hints and clues on hybridizing. He used refrigeration to retard flowering of some varieties and forced the flowering of others, in order to make new crosses, but believes that too much forcing is not successful.

Two remarks of Dr. Bowers are most quotable. One is as applicable to human relationships as it is to plants; "it is the individual who is important, not the race to which he belongs." He facetiously compared botanical nomenclature to philosophy;—"The systematic misuse of a technological terminology especially devised for that purpose." I am sure that many an amateur would agree with him.

Joseph Gable was the darling of the Conference. This grand old man in the field of rhododendron hybridizing was given an ovation at every opportunity. His modesty in the face of his outstanding accomplishments was most endearing. He felt that we were getting tired of sitting and listening, so he pocketed his paper and extemporized for too few minutes. He referred to Dr. Skinner's fine paper of the evening before and said that,

in spite of the inter-relationship and the natural interbreeding among this group, some of them are extremely difficult for us to cross. He had found that *R. roseum x R. calendulaceum* progeny have more flowers in a cluster than most other crosses. *R. Bakeri* and *R. arborescens* seem to cross very readily.

He cited the help that Dr. Wister has always been to him, and spoke of the medal that had been given to him. But he stressed that we should not hybridize for such a goal (with an aside "but it helps")—that we really should not have a *goal* in hybridizing but we must have an *ideal*. We particularly liked his statement that the "force that brings life into this world would never limit it or negate it."

Mr. A. M. Shammarello, Euclid, Ohio, interested us particularly for some of his seemingly unorthodox practices. About 1920, when importation was restricted, a scramble was made for grafted and seedling rhododendrons to compete with the truckloads of collected plants being offered for sale. The Shammarello nursery is on 10 acres of sandy soil. The pH rating was 3.8 and the rhododendrons were ailing so his father decided to add limestone, to raise the pH to about 5. Since the plants were dying anyway, he did not feel he was taking any great chance; amazingly, the addition of lime made sick rhododendrons well. In Ohio plants are grown in open fields without trees for protection. In a winter when even Northeastern hardy rhododendrons froze to the ground or were killed outright, *R. Smirnowii* and a few others came through and this motivated Mr. Shammarello in hybridizing. He made countless crosses to see what resulted from specific crosses. In some crosses plants proved to be tender and shy bloomers. In others the plants were hardy and of good color. Some hybrids are particularly individualistic in passing characteristics on to offspring. *R. Smirnowii* produces hardy, semi-dwarf progeny with flowers of good pinks. The *R. catawbiense* hybrids were variable as to hardiness but the majority of them retain *R. catawbiense* color. 'Cunningham's White' is so dominant that its seedlings will bloom within a day or two of the parent. Since 1935, 100,000 seedlings from controlled crosses have given Mr. Shammarello about 100 clones, of which 15 have been named.

Mr. Rudolph Henny of Brooks, Oregon, says all that is necessary for the breeding of good rhododendrons is luck in selecting good parents for the hybrid. He says that Mendel's law is tricky, at times almost fraudulent, especially in first generation hybrids. This is particularly apparent in blue tones. Recrossing brings quite different results. Now there is more crossing of sister-seedlings and selfing of hybrids. The original plan was to stay in the color field and to have at least one of the parents a species. In the crossing of species that are similar in color, habit or hardiness, the offspring will be nice but nothing new or very exciting. Rhododendron hybridization has just begun, in spite of the thousands of hybrids in existence today. The golden years of rhododendron hybridizing are ahead of us and it would be nice to be here 50 years from now when rhododendron hybridization will be on its way with a fair start.

H. L. Larson of Tacoma, Wash., said that the hybridizer must try to keep in mind the general type of home construction in his area and give the home owner plants suitable for his specific requirements. He stressed the fact that we must not belittle a plant just because it carries the name of an unloved group, and cited a blue *R. ponticum* that he had given John and Rudolph Henny, years ago. The reaction was somewhat less than enthusiastic at that time, but now he feels it is an excellent blue, equal to the best of *R. Augustinii*. He also mentioned one sport on a plant of *R. racemosum* which was much larger than the type and had the color of 'Fusilier.' In 1930, Mr. Larson made crosses between *R. discolor* and *R.* 'Marinus Koster.' Only three plants were grown on to flowering size and all were given names. Some of the trusses are about 16 inches high. The remainder of the plants were used as understock for grafting a collection of 'Naomi' forms.

The afternoon of May 13 was spent at the Test Garden where we saw the well-planned, beautifully executed Rhododendron Show of

above. The trusses were displayed in a pavilion, young plants of many species were in raised beds behind the pavilion, and the gardens themselves were so handsome that it was difficult to say where the show ended and the permanent displays began. We tore ourselves away just in time to dress for dinner and the annual business meeting of the American Rhododendron Society.

Dr. J. Harold Clark, president of the American Rhododendron Society, called the meeting to order. The first business of the evening was the presentation to Sir Giles Loder of a copy of "Rhododendrons for Your Garden," and for the Royal Horticultural Society a gavel carved from a piece of *R. maximum* from N. Carolina. The same book was also presented to Herr Hobbie, Mr. Knight, Mr. Grootendorst, Dr. Yeates and Dr. Fletcher. The results of the Portland Chapter Show were given and may be found in the next issue of the Society's *Quarterly Bulletin*. It was announced that the *Proceedings of the Conference* would be sent to all who registered and would be made available to others. Two gold medals were presented—one to Mr. George Grace for his part in the founding of the Society (he was its first secretary) and in its growth. Mr. Delbert ("Dell") James also received a medal for his outstanding contributions over a long period. The Roll Call of the Chapters brought answers from 15 of the 17 now in existence. The 1962 annual meeting of A.R.S. will be held on May 6, 7 and 8 at Winterthur, Delaware, the estate of Mr. H. F. du Pont. It was announced that the number of registrations was 248, but many of these were for more than one individual so the number of persons attending the Conference will be reported later.

Dr. J. S. Yeates, from the Massey Agricultural College, Palmerston North, New Zealand, told us of "Rhododendrons and Azaleas in New Zealand." Dunedin, on the southeast coast of the South Island, is in almost the same latitude as Seattle, and the climate of Auckland is similar to that of California. The west coast of New Zealand has a moist climate similar to ours and 78 degrees would be considered a heat wave, while 14 to 16 degrees of frost would be unusual. Christchurch is the home of N. Z. Rhododendron Association. Most growers there are farmers. One activity of the society is importing and propagating new material for distribution to the members. They also make their own crosses and send seedlings to the members to grow on. The beautiful colored slides showed us rhododendrons grown as street trees, embellished with large bright red trusses. The variety of rhododendrons grown there gave us a new concept of the capabilities of that island area of the southern hemisphere.

From 9:00 a.m. Sunday morning to 6:30 p.m. that evening, we were transported from one magnificent garden to another, some modern as tomorrow and others with gigantic specimens of shrubs and trees that were planted in the late 19th century. All day long we were saying good-bye in the manner of those who have taken an ocean trip together. This experience was another example of the goodwill and friendly conversations that can take place between the citizens from many nations who find respect and understanding in the bond of a common interest.

Some Arboreta

(Continued from Page 36)

beech and Scots pine trees, out in open, rocky meadows where members of the *Triflorum* series flourish en masse, and as dwarf shrubs in the rock garden.

Frequent with them are handsome examples of fine conifers, especially firs, spruces, hemlocks, and such rarer genera as *Athrotaxis, Podocarpus* and *Fitzroya* from the southern hemisphere.

The walled garden behind the house is filled with fine plants of all kinds, and so indeed are all the various sections into which this large and superbly landscaped estate is subdivided. If the living contents were catalogued they would be the envy of many a western arboretum; certainly, being now in the charge of the National Trust of Northern Ireland, they are going to be preserved and cared for to bring pleasure to many thousands of visitors in future years.

Ceanothi for the Pacific Northwest

(Continued from Page 42)

Name	*Height (feet)*	*Habit*	*Flower color*	*Hardiness in Puget Sound region*	*Garden use and local availability**
C. thyrsiflorus var. *repens.* "Creeping Blue Blossom"	½-1	Creeping, evergreen	Deep blue	Fully hardy	Occasional in nurseries; similar to *griseus horizontalis,* but smaller-leaved
C. Veitchianus (griseus x *rigidus?)*	4-6	Erect, evergreen	Azure blue	Hardy in Victoria, B. C.	Very popular in British Isles; small, glossy-green, toothed leaves
C. velutinus var. *laevigatus* "Varnishleaf Ceanothus"	6-20	Arborescent, evergreen	Cream-white	Native, hardy	Deserves much wider use, esp. in ample open woodland setting; not locally available in nurseries

*If not available locally, try Mr. Louis Edmunds, native plant nurseryman at Danville, California.

Cistus in Southern Spain

(Continued from Page 46)

Pau) although these also would not be flowering for some weeks.

Latest of all to flower, last to be found, on my final day's hunt, most exciting as a rarity in nature as well as in cultivation, was what I suspect may be the dullest as an ornamental. It was towards the close of a memorable afternoon, hot, brilliant, the air rich with the all-pervading scent of the cistus accented with lavender, shrubby thymes, myrtles and minor fragrances; a pair of eagles sporting high in the sky, and the soft, always distant-sounding, call of hoopoes underlining the silence. I had been pushing through thick scrub on almost pure sand not many miles from the coast when a little group of rather sparse, dark dull green bushes in an open place, lightly shaded by pines, caught my eye. A cistus, and it could only be *C. Bourgeanus* Cosson. I was looking at the long-stalked halimium-like little capsules in the vain hope of finding a few seeds when a shepherd came up to me. He probably made a good tale that night out of the strange behaviour of a foreigner collecting simples.

The Halimiums, close relations of Cistus, and often intermingled with them in great profusion, can only be mentioned as acting hosts to the strange and showy parasitic *Cytinus hypocistus* more often than the Cistuses themselves, contrary to what I had seen in France and Italy.

Looking out of my windows back in Somerset, England, the tremendous adaptability of plants impresses me anew. *Cistus albidus* flourishes as might be expected on my thin soil, about half of it lumps of calcium carbonate, but how do *CC. salvifolius, monspeliensis, ladaniferus* itself, amongst others, contrive not only to grow, but keep in character in such an alien soil, with frequently dull if not streaming skies affording only a fraction of the insolation and the evaporation to rainfall ratio to which they are normally adapted?

Summer Flowering Heaths

(Continued from Page 48)

bells, which are a great improvement over the type. *D. cantabrica* var. *Praegerae,* discovered by Mrs. Praeger in Connemara, although not so tall as *D. cantabrica,* is very striking and beautiful during the summer with its large bright pink flowers and dark green leaves. It makes an excellent plant for the rockery and will do well in half shade. A hardy and vigorous grower, clipping back each spring benefits the plants, especially the older ones, preventing them from becoming leggy. *D. azorica,* from the Azores, as the name suggests, is much dwarfer and more compact in habit. It requires a warm sheltered, rather treasured, spot in the rock garden. The many crimson-red flowers borne in June and July make it a special favorite.

Towards the end of the summer many of the forms of *Calluna vulgaris* are already opening their flowers and preparing to treat us to a further galaxy of color which will continue far into the fall, but that, I feel, is for another chapter.

Fort Borst Arboretum, Centralia, Washington*

MARGARET SHIELDS

THIS is a story about an infant, an infant arboretum. Like all other infants, it is small, it is being nursed and cherished, and it is changing almost by the hour. No doubt, it will suffer growing pains, and at times cause its parents worry as well as pride. It is our hope as we work and strive for a common goal, that this infant will grow into an outstanding citizen in our community.

How was this infant arboretum conceived? It all started when a Centralia housewife rebelled against her husband's hobby of planting trees in her rose bed. The husband, James Dick, forester for Weyerhaeuser Company, had been pursuing this hobby for many years, until the day came when there was no space left for his wife's favorite rose bushes. At this time the infant arboretum got its start. Dick sought other people, who shared his interest in trees. He found Rufus Kiser, instructor of forestry at Centralia College, and Phil Spicer, an amateur botanist, were as avid as he to create an arboretum. These three men formulated ideas, plans and steps of action.

The first action, in the spring of 1960, was to propose to the City of Centralia's Park Board, the establishment of an arboretum on city owned land at historic Fort Borst Park. The objective of the proposal was to make available a collection of forest trees for study and enjoyment by the people of the community, and especially by the forestry students of Centralia College. Enlargement of the forested portion of Fort Borst Park would ultimately increase picnic and play area. These proposals were approved by the Park Board and the City Commission. It was known from the beginning, of course, that the limited park budget would permit no contributions of city funds on the new venture.

The area to be used was approximately 5 acres, immediately surrounding the 100-year-old Joseph Borst home. The home site is bordered by the Chehalis River on the south, at a point where the Old Oregon Trail travelers forded the river. The Fort Borst blockhouse, which originally stood near the home, was moved to the main entrance of the park several years ago, and can be seen from Highway 99.

As a beginning twenty-five trees were planted in the spring of 1960. Planting in the spring of 1961 has swelled the number to 142 trees, representing 92 species. The City Engineer has surveyed a road right-of-way through the area to connect the Borst home with Fort Borst Park. A "Memory Lane" of trees, dedicated to individuals or groups, is being established along this right-of-way.

One might say that this baby has been, not bottle-fed, but bucket-fed, through its first year. Water was carried by bucket to nurture these plants.

On March 15, 1961, a public meeting was held to organize a society. About thirty people attended the meeting, and were willing to help care for and support this infant. At the March 29th meeting, the first slate of officers was elected. President, James Dick; vice-president, Rufus Kiser; recording secretary, J. L. Willison; treasurer, Mrs. Will Gray; arboretum director, Phil Spicer. It was only fitting and proper at this time, when all the godparents were present, to christen this child, Fort Borst Arboretum. At the April meeting, by-laws were adopted and memberships were opened to individuals and groups interested in the purpose of the society. At present, there are several garden club memberships, and 15 individuals enrolled.

(Continued on Page 65)

*We are happy to be able to report the initiation of a new Arboretum in the State of Washington and wish it well!

What's Happening in the Arboretum

On Monday, February 27, 1961 the final planting and dedication of the memorial fountain to the late Mrs. W. W. Sawyer took place in the presence of Mr. Sawyer and members of the Maude Sawyer Unit (No. 19) of the Arboretum Foundation, which made a handsome donation towards the cost of this fountain.

This charming and practical memorial (fig. 8) is located beside Arboretum Drive North (the Upper Road) in the Arboretum, opposite Rhododendron Glen. It was designed by a former member of the University Architect's staff, Mr. Donald J. Foote, and constructed by personnel from the masons shop of the Physical Plant Department of the University, using granite blocks for the wall. The fountain basin is also of granite.

Planted at the foot of the wall is *Mahonia Aquifolium* 'Compacta,' a recent introduction from Oregon; on the north side the bed is filled with *Sarcococca Hookeriana* var. *digyna*, with three varied camellias among them for added color and interest at different seasons.

EXBURY AZALEAS and a *Magnolia veitchii* tree have been planted in the Grinstead memorial garden down the hill west of the Sawyer memorial fountain. Mrs. Carl Ballard has been in charge of the project, funds for which were contributed by friends of Mrs. Grinstead.

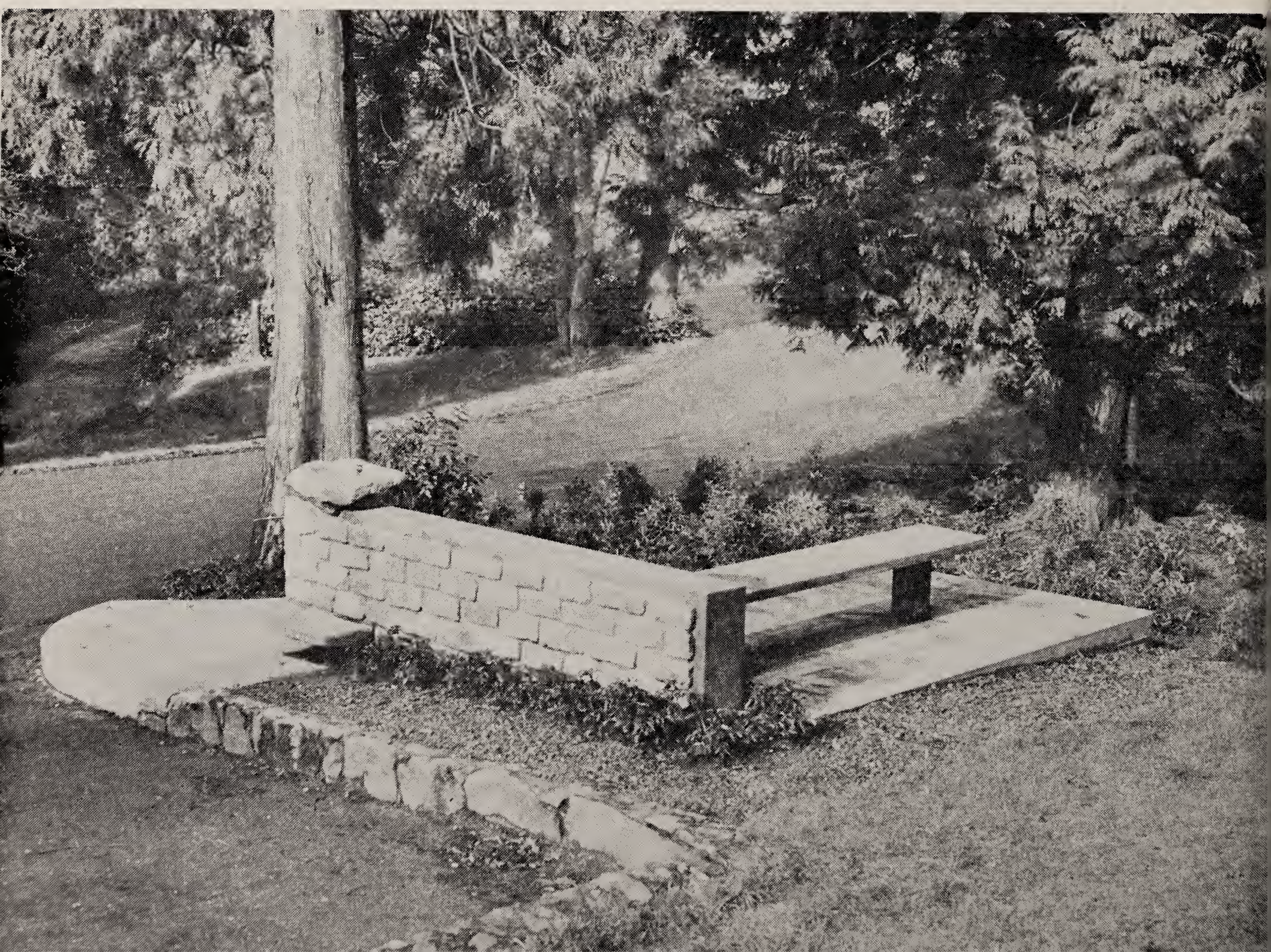
Rocks have been placed in the proposed Endre Ostbo memorial garden by volunteer labor from the Seattle Rhododendron Society who are sponsoring the project. This planting will be located to the north of Rhododendron Glen.

Planting, fertilizing, and other work has

Below:

The Maude E. Sawyer memorial fountain and bench in the Arboretum, dedicated February 27, 1961.

FIG. 8 PHOTO BY: J. A. WITT



continued to make the Japanese Garden even lovelier. It attracts a continuing stream of visitors who are greeted by volunteer hostesses. On Sunday, May 14th, 1800 adults and children were counted entering the garden. The City Council, Park Board, and University authorities have decided to install turnstiles at the entrance. Funds collected from the small charge will be used for maintenance of the garden.

In recognition of his many contributions to the Arboretum a life membership in the Arboretum Foundation has been presented to Mr. Oliver Ester.

Arbor Day, April 12th, was recognized by the planting of a Deodar cedar tree on the south bank of Rhododendron Glen in the presence of representatives of the Park Department, Arboretum Foundation, Boy Scouts and other groups. Dean Marckworth of the College of Forestry gave a brief talk on the origin and meaning of Arbor Day. In spite of heavy rain, over one hundred members and friends of the Arboretum turned out that day to weed in the Arboretum on their annual Work & Fun Day.

Between April 14th and May 5th 17,197 cars were counted at the north gate, for a total of over 60,000 cars since the first of the year.

On May 15th the Arboretum Foundation presented Mr. Frank P. Knight, Director of the Royal Horticultural Society's Gardens at Wisley, Surrey, England in an illustrated lecture on these world-famous gardens, in the auditorium of the Health Sciences Building on the University campus.

On May 23rd the Arboretum Foundation sponsored a "Water-Garden Tour" using private boats furnished by generous owners for a two and a half hour cruise to some of Lake Washington's most beautiful waterfront gardens. Mrs. Robert LaBow was general chairman.

This Is Your Arboretum, Kept Alive By Your Support

We are pleased to welcome the following new members (March 11 through June 7, 1961) *Supporting*—Wm. J. Bain & Harrison Overturf. *Contributing*—Mrs. Thomas H. Meadowcroft, Mrs. Lloyd W. Nordstrom. *Sustaining*—Mrs. Donald H. Amick, Mrs. Douglas Barnes, Mrs. Edward Chabot, Mrs. Dallas Donnan, Sr., Mrs. John L. Fellows, Mrs. James B. Howe, Mr. and Mrs. Harry H. Howell, Mrs. Lloyd J. Noland, Charles E. Odegaard, Mrs. James D. Ruggles, Friendly Neighbors Garden Club, Green Wood Garden Club, Inland Empire District of Federated Garden Clubs, Olympic Penn. Chapter of American Rhodn. Soc., Portland Garden Club, Puget Sound Lily Soc., *Annual*—Mrs. C. J. Allen, Jr., Mrs. James B. Allen, Miss Dorothy C. Anderson, Mrs. Kenneth R. Anderson, C. L. Attaway, M.D., Mrs. A. D. Ayrault, Jr., Mrs. C. L. Baker, Mrs. Thomas Bourns, Mrs. Julian Bower, Mrs. Dan Bucholz, Mrs. Albert Butterworth, Mrs. Max G. Cain, Mrs. Allen B. Codling, Mrs. R. W. Cram, Mrs. Lloyd L. Crandall, Mr. and Mrs. Lee A. Crowthers, Mrs. Jon Daniels, Mrs. A. G. Daubert, Mrs. E. E. Dionne, Mrs. Carl S. Doherty, Mrs. Rubin Duboff, Mrs. R. L. Duncan, Mrs. Wm. W. Foster, Mrs. John Frykholm, Mrs. Paul Gardner, Mrs. Darrel H. Gordon, Mrs. James P. Green, Mrs. Jerome E. Greenway, Mrs. G. Keith Grim, Mrs. Stephen J. Hall, James W. Hanover, Mrs. Perry W. Harrison, Mrs. Robert A. Hayek, Eric W. Hoyte, Mrs. Robert L. Hudson, Mrs. Hamilton Hyday, Mrs. E. J. Janisch, Mrs. T. A. Jobs, Mrs. Leonard W. Kirk, Mrs. G. T. Mann, Mrs. Ray McCoy, Jr., Mrs. George C. Miller, Mrs. Robert W. Murphy, Mrs. Lloyd Nachtwey, Jr., Mrs. Virginia L. Nichols, Mrs. Anna Cate Nott, Mrs. Robert E. Nugent, Mrs. Arnold Odden, Mrs. Louis H. Pepper, Mrs. James S. Ramsay, Mr. and Mrs. Gordon O. Rasmussen, Mrs. Fern Ricketts, Mrs. R. E. Ryan, Mrs. A. R. Schendel, Mrs. P. W. Sieverling, Mrs. C. P. Steele, Mrs. Otto Syvrud, Mrs. Forrest Tromley, Mrs. Ray Trudeau, Arthur W. Webb, Mrs. J. A. Werle, Mrs. Leonard Whitlock, Dr. and Mrs. A. G. Zoet.

We are most grateful to the following members who have raised their dues to: *Supporting*—Mrs. Lawrence Bogle. *Contributing*—Edw. B. Dunn, Mrs. Lawrence J. Pierce, Mrs. Wm. G. Reed, Mrs. S. S. Sayres. *Sustaining*—Mrs. Edw. W. Andrews, Mrs. David R. Bain, Mrs. Joel Baker, Mrs. Vaughn D. Baker, Mrs. A. R. Barthold, Mrs. Robert Berry, Mrs. Frederic Blanchett, Dr. C. W. Bledsoe, Mrs. Harry Bowen, Mrs. Anson Brooks, Mrs. Lawrence Calvert, Mrs. Edw. E. Carlson, Mrs. Frederick Collins, Mrs. Frank A. Dupar, Sr., Mrs. Ford Q. Elvidge, Mrs. Paul E. Fields, Mrs. Keith Fisken, Mrs. Harry Franzheim, Mrs. R. Mortimer Frayn, Mrs. James H. Frink, Mrs. T. A. Gildersleve, Mrs. Barrett Green, Mrs. Frank P. Helsell, Mrs. W. Kirby Holmes, Mrs. Frank E. Jacquot, Mrs. Carl Jensen, Mrs. Philip G. Johnson, Mrs. Alfred E. Jones, Mrs. Robert C. Lenfesty, Mrs. Lester Lewis, Mrs. D. K. MacDonald, Dr. and Mrs. Richard E. Markley, Mrs. John C. McCollister, Mrs. A. A. Naef, Mrs. Arthur Nordhoff, Mrs. Tom S. Patterson, Mrs. Andrew Price, Mrs. Allan A. Rautenberg, Mrs. W. H. Reely, John Riach, Mrs. John Schwager, Mrs. Frederick Shanaman, Washington Seed Co., Mrs. W. R. Windmiller.

BOOK REVIEWS

Gardens in Winter, by Elizabeth Lawrence. (Harper & Bros., New York, 1961.) Price $4.50

WHEN reading "Gardens in Winter" the gardening reader feels he has had a charming and intimate conversation with one who speaks his own language. The book is exciting and I found myself frequently turning the pages quickly to be sure there was much more to come. It is full of personal experiences and there is a frankness of sharing these experiences that is an alluring peculiarity of most well-informed gardeners.

Mrs. Lawrence and her garden are in Charlotte, North Carolina, where the climate is not unlike our own. In fact, she has reproduced a map prepared by the National Agricultural Research Department that shows North Carolina and Washington state are in the same general climatic zone. She emphasizes that "importance of information about plants must be regional to be of any use."

She mentions names of plants difficult with her that grow easily with us. Many of the plants she mentions that we cannot grow successfully here I remember to have seen in a garden on the seventeen-mile drive near Carmel, California. Maidenhair fern does not seed itself in her garden as it does in every cranny with us. She can grow crape myrtles that I found I could not grow successfully on Bainbridge Island.

There are a few pages about birds in winter, mosses, and small growths in spring; Helleborus, the little bulbs, species iris, cyclamen, as well as the early flowering trees.

Interesting legends about plants give a brisk tempo to the book. One story I never heard about the Holy thorn *(Crataegus monogyna praecox)* was interesting to me. It is supposed to bloom at the approach of British royalty. To confirm this, Mrs. Lawrence asked a friend in Washington, D. C., to examine the Holy thorn when Queen Elizabeth II visited the National Cathedral in October, 1957. The friend actually found a few blossoms on the bush that grows there.

She mentions Carl Starker and Fred Delkin, our garden friends in the west, and Mrs. Lester Rowntree in Carmel. She quotes the BULLETIN from the University of Washington Arboretum. There are many quotations from her very evident store of horticultural information.

The illustrations by Caroline Dorman are line drawings, accurate and delightful. Caroline Dorman was awarded the Garden Club of America's Eloise Payne Luguer medal for special achievement in the field of botany.

G.T.D.

Camellia, Its Appreciation and Artistic Arrangement, by Choka Adachi, (Koyo Shoin Co., Ltd., Tokyo, Japan, 1960). Price $25.00.

THIS is a Japanese book translated into English in language as simple as a first reader, often with delightfully quaint phrasing. It is, as the title indicates, a sincere appreciation of camellias with particular emphasis on their use in flower arrangements.

In his preface the late Ralph S. Peer calls it "one of the finest books on camellias which has ever appeared in any country." Handsomely illustrated with colored photographs the camellia enthusiast could wish for translations of the Japanese names so as to make comparisons with lists of available varieties.

As he states in the foreword, Mr. Adachi is neither a botanist nor a gardener, yet he challenges both; the botanist (among other things) to discover or rather rediscover additional camellia species, the gardener to extend the limits of the camellia's regional hardiness.

Pictured are immense 400-year-old camellias (trunks 2½ meters across and 9 meters high) that could only happen in a country like Japan where gardening has been an art for centuries. To gardeners in our comparatively new Northwest land such plants are amazing, something truly worth seeing.

Primarily, only three species of camellias are discussed by Mr. Adachi—snow camellia *(C. rusticana)* and its crosses, *C. japonica,* and Higo camellias. Anyone interested in Bonsai should be delighted with the chapter on dwarfed camellias. Though many articles have been written in the past few years on the history and legends of camellias, Mr. Adachi's bits of information based on his research into their Japanese background have added many new and interesting stories. Little known uses of the camellia are described in a chapter which explains the extracting of oil from camellia seeds and its uses, use of leaves not only for tea but for smoking, and of the wood for charcoal burning.

Fully half the book is devoted to flower arrangements with camellias predominating or used exclusively. These are illustrated with colored photographs and explained with line drawings. The author expresses some doubt as to the efficacy of teaching flower arranging by the use of pictures and the printed word but he goes into his subject so thoroughly that anyone gifted in arranging will find it quite adequate. He assures the amateur that they, too, may become proficient if they will carefully study the text. Not only the esthetics but the background and mechanics of flower arranging are carefully explained and illustrated in detail.

Handsome illustrations and an unusual, interesting and informative text undoubtedly warrant the high cost of this book. One could, however, wish for a more substantially bound volume.

HELEN G. BUZARD

The Care and Cultivation of Indoor Plants, by Violet Stevenson. Published by Philosophical Library, Inc., New York, 1959. Price $4.50.

Those who live in apartments or where out-of-door gardening is impossible will find this book invaluable as an instructor and guide for indoor growing.

Miss Stevenson, when asked to define a house plant, replied: "A house plant is one that is grown indoors under normal living conditions, for periods of a year or more, because of the beauty of its shape, its foliage, its flowers or its texture."

The nine chapters of information and instruction are followed by a chart listing nearly one hundred plants suitable for indoor culture, giving description, likes and dislikes, watering and feeding advice.

The first two chapters deal with the shape of the plant, its foliage, flowers and texture, learning to know them and also how best to use them. Modern homes with modern furniture and decorative schemes are admirably suited as backgrounds or supports for climbing vines or exotic foliage.

As indoor plants are as a rule propagated indoors several things are named as necessities in their growth. They are warmth, steady temperature, freedom from draughts, light and humidity. In purchasing plants the leaves should be green and fresh, the growing buds healthy, the pointed tips on plants such as philodendrons should be well filled and plump. As a general rule, continue to feed plants that are in flower and that are sending up new growth, e.g., azaleas and begonias.

Cyclamen (florists) and African violets are defined as house plants and are recommended; instruction as to their culture is given.

The book is well supplied with black and white illustrations, sixteen in all, to demonstrate the uses to which the plants may be placed.

For those interested in growing plants indoors, this book is invaluable.

M. R. T.

The Lawn Book, By Robert W. Schery; Macmillan Co., New York, 1961; price $5.95.

DR. SCHERY has given to the home owner perhaps the most complete lawn book ever published in America. It is completely up-to-date in every detail, giving the most recent research in control of weeds, insects and turf diseases.

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It should become a standard book for reference and research and be included in every public library.

PAUL BROWN

Trees Around the Museum, Occasional Papers of the San Diego Society of Natural History, No. 11, by Reid Moran. San Diego, California, 1961. 40 pages.

THIS little booklet lists and describes 51 trees growing on the grounds of the San Diego Natural History Museum. Anyone interested in the trees of San Diego could do no better than to pick up a copy of this beautifully done pamphlet at the Museum.

J. A. W.

FLOWERING ALMOND

One of the earliest flowering shrubs that frost and wind fail to harm is the flowering almond, an old-time, well beloved favorite. It grew in my mother's garden in Michigan and many visitors to my garden never failed to grow eloquent with joyful remembrances when they saw it in flower.

My shrub was probably the dwarf flowering almond, *Prunus glandulosa* from China and Japan. Now there are new varieties, variously named.

The almond begins blooming in late February with long, arching, three to four foot branches wreathed closely with exquisite, double rose-pink flowers. It blooms on wood produced the previous season, called "new wood" and it is necessary to cut back all old wood (faded flowering stems) to give the new wood strength to blossom the following spring. This gives the gardener a clear conscience to cut the long branches of rosy florets for house decorations.

Hard pruning produces more new wood each year and consequently more blossoms. It is generally free from insect pests.

It may be increased by cuttings or suckers (if not a grafted plant) but cannot reproduce itself from seeds.

G. T. D.

Fort Borst Arboretum, Centralia, Washington

(Continued from Page 61)

Looking into the future, we see a need for water pipe. City water is available, but at some distance. Landscaping and flowering shrubs are being kept in mind. To have "Memory Lane" graded and gravelled, or black-topped, is another goal.

Yes, we are fostering an infant arboretum. We parents know there's a long row ahead. But then what is more rewarding than to see a faithfully nurtured child growing in beauty and serenity in the midst of a selfish and chaotic world.

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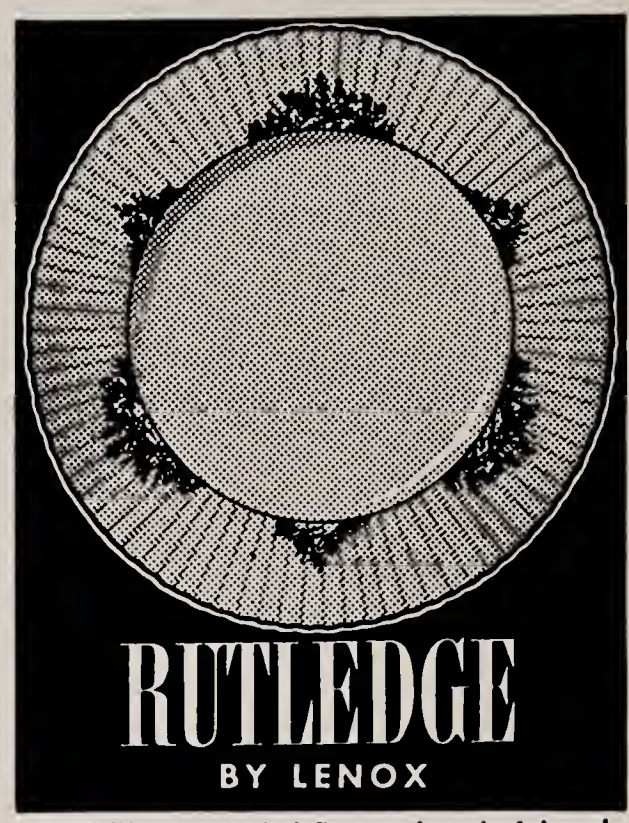

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